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NELSON



THE KEYMER PORTRAIT

The portrait of Nelson done from the life by Matthew Keymer when Nelson was at Yarmouth on his way to Copenhagen was entirely unknown to the general public until Mr. F. S. Cullind directed attention to it in October 1930. It hangs in Yarmouth Town Hall.

SIAM—VOLUME II

SIAM

By W. A. GRAHAM, M.R.A.S.

WITH ONE HUNDRED AND FIFTY-THREE
ILLUSTRATIONS AND A MAP

IN TWO VOLUMES—VOLUME II

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PART I.

INDUSTRIES OF SIAM.

AGRICULTURE and Fishing are the two main industries of Siam. Indeed so much is this the case and so far do these absorb the attention of the inhabitants of the country, that the number of people who are not in some way concerned with either of them and who are engaged in other permanent occupation is almost infinitesimal. It may, in fact, safely be said that, outside Bangkok, nearly every man, except he be a monk, is either a cultivator or a fisherman, while even in the capital a large proportion of the inhabitants derive much of their income from the rents of fields, orchards or fisheries.

There are seasons, however, when the cultivator cannot farm and the fisherman cannot fish, and at such times various other industries are fitfully engaged in. The Siamese is not in the least addicted to work for work's sake, but a man must have something to occupy him during the long weeks of the hot weather when the fields are baked to the hardness of rock and when the inland fisheries are dry, as also when the rain storms of the wet season are stimulating the crops and preventing sea-fishing. Moreover, advancing civilisation is increasing the wants of the people while the regular payment of taxes is not now to be avoided, so that a little extra money over and above the earnings of the plough or the nets is not altogether to be despised in these times. Hence not a few persons turn their hands during a part of the year to boat building, pottery, brick-making, silk-growing, paper-making, wood-craft and other minor industries, suspending

the same as soon as the time arrives for the resumption of their substantive occupations.

Apart from the foregoing there are, however, a few industries of a more or less professional nature which demand the whole time of their votaries, and the earnings of which amount to more than mere adventitious pocket-money. These are rice-milling, distilling, sugar refining, mining and forestry, but such is the disposition of the Siamese that these lucrative trades are left almost entirely in the hands of immigrant Chinese or, in the case of the last-named occupation, of tribesmen from the northern mountains. The Chinaman, indeed, not only monopolises most of the more important industries but plies also the smaller trades, to the exclusion of all but a few of the natives of the country. Thus the shoemakers, tailors, carpenters, blacksmiths, tinsmiths, carriage-builders, bricklayers, even market-gardeners and manual labourers are usually Chinese, while a very large proportion of the shopkeepers, pawnbrokers and petty traders are also of that nationality.

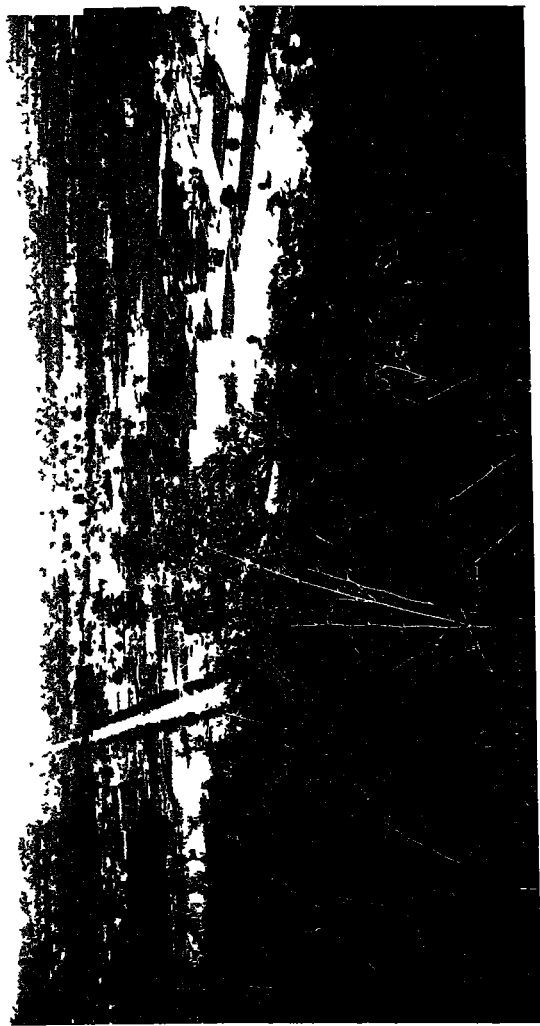
AGRICULTURE.

Rice. From time immemorial the plains, valleys and parts of the hills of Siam have been devoted to the cultivation of rice, and the present inhabitants of the country continue to plough, sow and reap there, after the same methods and with the same kind of implements, as were employed by their predecessors a thousand years ago. To say that rice is the principal product of the country conveys but a feeble and inadequate impression of the supreme position of this cereal in the land. It might in fact almost be said that rice is Siam's only product for, though she exports timber, tin, fish, cattle, pepper and copra, and grows tobacco, maize, millet, sugar, cotton, betel and a great variety of fruits, yet her rice production preponderates so

entirely, and her commerce, politics and social conditions are now, and have always been, so profoundly influenced by rice, that all these lesser products amount by comparison almost to nothing. The European whose idea of a staple food is formed from a knowledge of the part played by bread in the economy of his own country, can have but small conception of the importance of rice to the Siamese. It constitutes not merely the principal, but almost the sole food of every one, from the highest noble to the lowliest plebeian ; horses, cattle, dogs, cats and all other domestic animals live on it ; it is used for making beer and spirits ; it enters largely into all ceremonial, while religious and superstitious observances in connection with its cultivation provide the people with their most frequent occasions for holidays and festivals. The most generally recognised means of investing money is, or was until house-property in the capital and banking took the public fancy, the buying of, or lending on, rice fields. The nobles are graded according to certain (nowadays purely nominal) grants of rice-land conferred by the king with every patent of nobility ; dealings in rice and the ownership of ricefields are the causes of most of the civil litigation in the law-courts ; and the result of the last, or the prospects of the next, rice-harvest, provide the most absorbing topics of conversation and discussion at all times. It is rice which forms the cargoes of the thousands of boats ever passing up and down the river Menam Chao Phaya, and the freight of the goods-trains which daily reach Bangkok from the interior ; it is rice which supplies the grist of the numerous mills of the metropolis and of many provincial towns (the furnaces of which mills are fed with rice-husk) ; it is rice that is carried away in the ocean-going steamers always to be seen loading in the Port of Bangkok or in the Koh Si Chang roads ; and it is from rice that the Government derives, directly or indirectly, almost the whole of its revenue.

In the history of the country also, rice has been an important factor. Many of the ancient invasions which swept over the land were caused by the desire of one ruler to possess the rich rice-fields of another, while the demands of agriculture were frequently the cause of the usually indecisive nature of the wars in which old Siam so often indulged. Throughout the rainy season the peasant of ancient Further India diligently worked to obtain his crop of rice ; then, with the coming of the cold weather, having reaped and garnered his grain, he took his trusty sword and spear and went on the raid with his Chief, in the lively hope of loot, of unlimited opium to smoke, and of only the smallest modicum of danger to be encountered. The approach of the next ploughing season carried his thoughts irresistibly homewards ; there were fields to be cleared, ploughs to be made, and spirits, without whose goodwill no crop was to be expected, to be propitiated ; and moreover, war with the rain falling was hardly amusing, besides being dangerous on account of the damp. And it thus happened that an army in the field usually began to dwindle away with the coming of the rains and the ploughing season, regardless of the progress of the war in which it was engaged.

Who shall say when the cultivation of rice first began in Siam ? The earliest traditions and records show it already in a flourishing condition there. It may have been introduced from China, where rice was certainly very much cultivated 5,000 years ago, or from India where it is almost as old, but it is more likely that its use dates back even beyond 5,000 years for, as wheat is found among the relics of prehistoric man in Europe, so, it may safely be asserted, did rice form a part of the belongings of his Asiatic contemporary. It is probable indeed that the inhabitants of Siam in the Neolithic age, traces of whose existence abound in the form of the polished celts peculiar to that period, already knew the uses of rice, and planted



THE GREAT CENTRAL PLAINS FROM THE WEST, SHOWING RICE FIELDS.



RICE PLANTERS' HUIS IN FLOOD-TIME

a semi-wild, undeveloped form of it in the mountain valleys and upland marshes which were all that then appeared above the sea of what is now Siam. Rice has been found growing wild, apparently indigenous, in China and in India, and may therefore be fairly concluded to have been indigenous in Indo-China also, seeing that this country lies between the other two and is now peculiarly the home of the rice plant, and to have crept by slow degrees into cultivation simultaneously in all three places. However this may be, it is certain that at the comparatively recent date of the first appearance of the Lao Tai ancestors of the Siamese on the upper reaches of the Menam Chao Phaya, the cultivation of rice had already been known to them for many centuries, while the more civilised Khmer with whom they came in contact had brought large areas of the plains of the lower Mekhông and the Menam valleys into a high state of cultivation, a condition promoted doubtless by the close connection which at that time existed between Kambodia and other rice-growing countries of the East.

In many parts of Siam there exist large expanses of country, now sparsely or not at all inhabited, which bear signs of having been cultivated at more or less remote periods. These at first sight would seem to imply that the country must once upon a time have been much more thickly inhabited than at present, but on consideration it appears that such a deduction is not necessarily correct, but that these vestiges of vanished populations merely corroborate historical records of transient assemblings of the people, voluntarily or by force, around the capital of first one and then another successive kingdoms and principalities. And, seeing that all such expanses are flat and bear distinct signs of irrigation it is to be supposed that all were rice lands. The most ancient are undoubtedly those in Eastern Siam and in the Pasak river valley, near the sites of old Khmer cities where the remains of

elaborate reservoirs and irrigation canals, often with worked stone facings, show the extent and importance of rice cultivation in very early times. Another such district is the highland valley of the Nam Ing river and its tributaries, between Chieng Mai and Chieng Rai in Northern Siam, where the land, dotted all over with remains of the fortified camps and cities of Lao settlers, some very ancient, others comparatively recent, bears clear evidence of having at one time produced food for a population in comparison with which the number of people now occupying this magnificent country is out of all proportion small. Yet another district is the tract surrounding the site of the erstwhile city of Chaiya in Southern Siam, where a mere handful of peasants cultivate one corner of a wide area of old rice lands the traces of which are now half obliterated by forest growth. Indeed the country bears in every part the signs of extensive rice cultivation on lands at present practically unused, going back in places to the most remote times of which knowledge is available; whence it is evident that with sufficient population and capital the present total rice production could be enormously increased.

The number of species of rice cultivated in Siam is usually put at three, though some of the numerous varieties into which these are subdivided are, by many authorities, considered as distinct species. These varieties are upwards of a hundred in number, the chief distinguishing qualities being difference of colour, size, shape or flavour of the grain, the absence or presence of the awn, and the length of time required to bring the plant to maturity. The main varieties are carefully kept separate in cultivation, but such is not always the case with the less easily distinguishable sorts, many of which are often found growing freely intermingled in one and the same small field. The three so-called species are *khao san*, the common rice of lower Siam, *khao nio*, glutinous rice grown

throughout the country, but not in large quantities except in the north where it takes the place of common rice as the ordinary food of the people ; and *khao deng*, literally "red rice," which, when boiled, appears other than white owing to the fact that the thin membranous glumes which adhere to the grain when husked are of red, yellow, purple or black colour according to the variety of the species. All three species are usually grown as water-plants but have varieties that are cultivated by the wild hill-tribes and others who have no standing water available, as dry crops. Many varieties are not only divided into wet and dry-land sections but are again sub-divided into quick-growing, medium and slow-growing kinds. Thus one may find three adjacent irrigated fields sown with grain similar in every respect, even to the name, the crop in which will ripen, one in three, another in four, and the third in six months from the date of sowing.

It would occupy too much space to describe separately each of the numerous varieties of the local species of rice, but one or two are worthy of note if only as showing the wonderful adaptability of nature to circumstances. As a rule the young rice-plants growing in a nursery must be transplanted as soon as they reach a certain height, that is, before they become so large as to choke each other, and in seasons of drought the entire sowing is liable to be lost by reason of the inability of the farmer to prepare his sun-baked land in time, after the first showers have tempted him to sow his nursery. A variety of common rice, *khao san*, is, however, to be found which, upon reaching a certain size in the nursery, stops growing though remaining perfectly healthy, until the heavy rain has come to soften the earth, when it can be transplanted, and resumes its growth apparently quite unaffected. It can be imagined how popular is this variety of rice in districts liable to an irregular rainfall, where, but for its peculiar qualities, the farmers would frequently

secure little or no return for their labour. Again, in many parts of the country, the land on which rice is grown is liable to floods of greatly varying severity. Here the ordinary rice-plant would frequently be destroyed, and a variety is therefore used which has been evolved in the course of centuries of selection. This grows at first as ordinary rice, but when the floods come, its growth is accelerated to keep pace with the rising of the waters. The straw, large and light, acts as a float and keeps the head of the plant above water, and, as the flood slowly subsides, lies on the surface, throwing out, at the nodes, lateral shoots that terminate in ears, and fibrous rootlets which draw from the water that additional nourishment demanded by the luxuriously growing plant which the original roots in the soil cannot supply. Thus a crop is secured, however severe the floods may be, though the resultant grain, owing doubtless to the rank growth of the plant, is small and inferior in quality to that produced on irrigable and drainable land. It is said that these two varieties, which to some extent compensate for the absence of artificial irrigation, are also found in the marshy plains of lower Bengal but in no other rice-growing countries.

The Siamese, in common with other Oriental rice-growers, apply an extensive nomenclature to their staple product. The generic term is *khao*; the seedlings when they first appear above ground are *kra* and when full grown have become *ton khao*; the grain fresh winnowed is *khao pleuak*, the paddy of commerce, and when husked is *khao klang* or *khao san* according to the thoroughness of the operation; the husk is *klaap*, and fermented rice is *khao mahk*. The fast-growing, medium and slow-growing crops are distinguished as *khao bao*, *khao klang pi* and *khao nak*, that is 'light rice,' 'mid-year rice,' and 'heavy rice,' and connoisseurs can determine at sight to which of these classes a sample of grain belongs. A further

distinction is made according to the process by which the rice has been cultivated, that transplanted during growth being known as *khao na suan* or garden rice, and that not so treated as *khao na muang* or provincial rice. Paddy that is grown in a few favoured districts on land irrigated during January and February and reaped in April and May is called *khao na trang*.

Cultivation of rice is conducted in Siam in three different ways: by planting in small fields on which a moderate and even supply of water can be maintained throughout the season, by sowing broadcast in larger fields subject to irregular supplies of water and sometimes to heavy floods, and by sowing or dibbling in rough, mountain-side clearings. The first method, called *na dam*, from *na*, a 'rice-field' and *dam*, 'to dive' (illustrative of the action of plunging the seedlings into the soft mud), which is practised with slight variations throughout the rice-growing world, is by far the most productive, and prevails wherever it is possible sufficiently to control the water supply. The second, *na wan*, from *wan*, meaning 'to sow,' demands less labour than *na dam*, but produces less grain, and that of an inferior quality; it is a primitive method nearly related to the third or jungle-clearing, dibbling process called *na pa, pa* meaning 'jungle,' which last is without doubt the most ancient form of rice cultivation, and is practised by the wild tribes of Siam as well as by those of Burma, China, India, Tonquin and elsewhere.

The fields devoted to the *na dam* process are surrounded each by its own small dam, a foot or so high, and thus form a series of shallow pans. All through the dry season these lands are an arid waste of baked, cracked, heat-stricken clay, but with the first showers heralding the rains the soil becomes soft, the cracks fill in and grass immediately springs up. Then the husbandman prepares, in a corner of one field, the nursery where shall be raised seedlings sufficient to

plant up the whole of his land. The soil of the nursery is churned into a mixture of wet mud and manure, on the well-smoothed surface of which the seed is thickly sown. Germination takes place almost at once, and in a few days the nursery is a thick, brilliant green mat of young rice-plants, for the reception of which the farmer and his family now prepare the rest of the land. The embankments are examined and made water-tight, and as soon as the soil is sufficiently moist it is ploughed. Enough water is then admitted, or opportunely falls as rain, to cover the field entirely to a depth of some inches, and a rake-harrow is introduced, by which means the weeds and grass uprooted by the plough are removed and the soil churned into a thick, porridge-like mass. As each small field is brought to this condition it is planted up, the seedlings, which have now grown to about eighteen inches long, being treated by a process called *tawn kra*, demanding no little skill on the part of the husbandman. Some hundreds of the plants are firmly grasped about the middle with both hands and gently drawn from the mud, the bundle is then swung in the air and brought down heavily against the raised foot of the operator, the mud adhering to the interlaced roots being thus shaken off, then dumped upon a little platform or single-legged table stuck in the mud, where it is shaken into shape and tied about with a wisp of grass, and finally swung down again to the ground, a compact, symmetrical packet (*mat kra*) with scarcely an injured seedling in it. Anon the bundles are carried to the field where planting is going on and are there deposited at intervals. Those engaged in planting untie them as they are required, and, separating the seedlings (*baang kra*) into wisps of four or five together (*kaw kra*), plunge these, with a single movement of the hand, or with the aid of a forked stick, deep into the mud where they are thereafter left to grow.

With the completion of planting, active operations



TRANSPLANTING RICE
The *Tach Koa* Operation



STUDENT TEACHING OUT-DOING RICE SEEDLINGS
IN THE RICE-PLANT FIELD

in the field are for a time suspended, all that is now necessary being an occasional inspection of the dams, the preparation of granaries made of bamboo matting coated inside with mud and covered with thatch, and, when the crop begins to ripen, the scaring of birds.

For the *na wan* process the land is ploughed as for *na dam*, but is harrowed without being flooded. No nursery is used, but the grain is sown broadcast as soon as the weeds and grass have been removed, the operation being thereupon completed.

The *na pa* method entails the maximum of labour and yields the minimum of profit. Some time before the rains begin, a patch of jungle is selected and the trees on it cut down and left to dry. After a short interval the dried timber, bushes and grass are burnt and the land thus cleared of everything except stumps. If the jungle is thin and the roots in the soil not numerous, a plough is then brought into requisition, but in most cases this is not possible and the ground has to be prepared by hoeing. When the earth has been well broken up and roughly weeded, the seed is sown broadcast or in holes made with a stick, half a dozen grains to the hole. Much additional labour is entailed by the rapid growth of weeds which have to be removed several times while the crop is growing. A clearing is used for two seasons only, as the soil is found to become exhausted so soon as to render a third sowing almost fruitless. Among the mountains the clearings are almost invariably upon the slopes, some tribes carefully selecting the steepest possible acclivities, the gradient being, through long habit, a matter of indifference to them while walking. Also, on account of the wood ashes available as a fertilizer, dense tree jungle is considered the best land and is therefore chosen rather than more open country, although the clearing of it is often a matter of great difficulty.

In the outlying districts, where jungle surrounds

the fields or is contiguous thereto, the damage done by birds is often very considerable. Green parrots are sometimes a scourge in these parts, great flocks of many thousands flashing back and forth over the yellow fields and settling among the golden ears, with beautiful but disastrous effect. They are not, however, allowed to rob unmolested, for the clay pellet from the bow of the watcher seated on a slightly-raised platform among the crop, speedily finds them out, or, if 'browning' with this small missile fails to scare them, a large ball of baked earth, launched from the whippy end of a long bamboo, soon sends the whole flock sweeping away with discordant cries to the next clearing, and so on until it arrives at a field the watcher of which is asleep, where it settles undisturbed, and in a few minutes of eating and scrambling makes a large hole for somebody in the year's profits.

The reaping season brings everybody into the fields again, wielding sickles and reaping knives, the shape of which varies in different parts. The crop is cut leaving a long stubble, then bound into small sheaves and stacked on the winnowing ground, a circular spot, either in the fields or near the village, bared of all growth and beaten down hard and level. The sheaves are often brought to the winnowing ground on light bamboo sledges drawn by the plough cattle, which latter are also now required for the threshing. This last is effected by driving the animals, yoked together, round a post to which the innermost is fastened, and spreading the sheaves out beneath their feet to be trodden upon until the grain is all detached from the straw.

Winnowing is performed by the simple process of pouring the grain on to the ground from a raised platform, the empty husks and the chaff being blown away in the descent. When the wind is high the raised platform can be dispensed with. The methods of reaping and winnowing are the same all over the country, except in those districts where the floods are

heaviest, and where reaping has sometimes to be done from boats.

The grain is now piled up in shining yellow heaps on the winnowing ground, and, in the southern districts, it is frequently bought at this stage of operations, by the middle-men dealers, for transport to the rice-mills. When not so disposed of, it is stored in the granaries until, favourable price and occasion offering, it also is sold and carried away to the mills. Enough grain is in all cases retained for food during the coming year and for next season's seed, upon the selection of which latter some care is bestowed, though, if tempted by good prices, a farmer will seldom decline to sell the grain reserved for this purpose, and chance being able to buy seed later, often with disastrous effect on the quality of his future produce.

According to an ancient custom which exists throughout Further India, and in fact in all countries where uncertainty of climate makes it advisable to take advantage of all favourable weather, agricultural operations in Siam were, and still are in the outlying districts, performed communally, that is, by numbers of the villagers working in concert in the fields of their neighbours in succession, and these labours in common, usually confined to transplanting and reaping, are made the occasion of much friendly intercourse and are looked forward to with pleasure. Thus, upon an evening, a farmer will visit his friends, and, informing them that his *kra* is well grown and his fields ready, will formally ask them to assist at the planting. The family soothsayer has been consulted and has pronounced the day to be a lucky one; the *Pu Yai Ban*, or village headman, has been informed and has given his consent; plenty of good white rice and a special brand of dried fish have been prepared; in fact, no expense has been spared that the planting may be fittingly accomplished. The neighbours, whose fields perhaps receive their water later and therefore

are not ready, willingly agree to take part and the next morning sees the whole band, the size of which varies with the area to be planted, out in the fields in their black working clothes and large white sun-hats. The men are set to pulling up, tying and carrying the *Kra*, and the women, lined out in the fields, receive the bundles, open them and plunge the young plants in the mud. Thus the work goes on all day, enlivened by a flow of badinage and laughter, the not over delicate jokes of the young men evoking prompt repartee of equal humour and breadth from the girls, who fire off their wit without looking up from the inelegant stooping attitude entailed by their occupation. Unfortunate is the youth who shall now deliver to the maidens untidy or mud-clotted bundles. Upon him descends a deluge of feminine sarcasm, withering him in the sight of his delighted companions. Indeed, the clumsy rice cultivator is an object of general derision and, whereas the young man who is handy with plough and sickle stands well with the elders and is admired by all, the bungler at this, the most important duty of manhood, goes through life with the heaviest of handicaps. It is the same with the other sex ; the girl who can plant her *rai* of land a day has no lack of suitors and, if comeliness be added to her other charms, is always much in request for working parties as a draw for the young men. True, her attractiveness may not be evident to alien eyes as she stoops and waddles, bare-legged, in the water, in her tight-fitting long black coat, diminutive *panung* and large white hat, all freely bespattered with mud, but to the youths of her own condition who watch her there, she embodies all the female charm they have been taught to recognise, while her industry and deftness indicate the comfortable home, the well-cooked rice and the general happiness in store for the fortunate man who shall get her.

In the evening the workers, washed and clean from

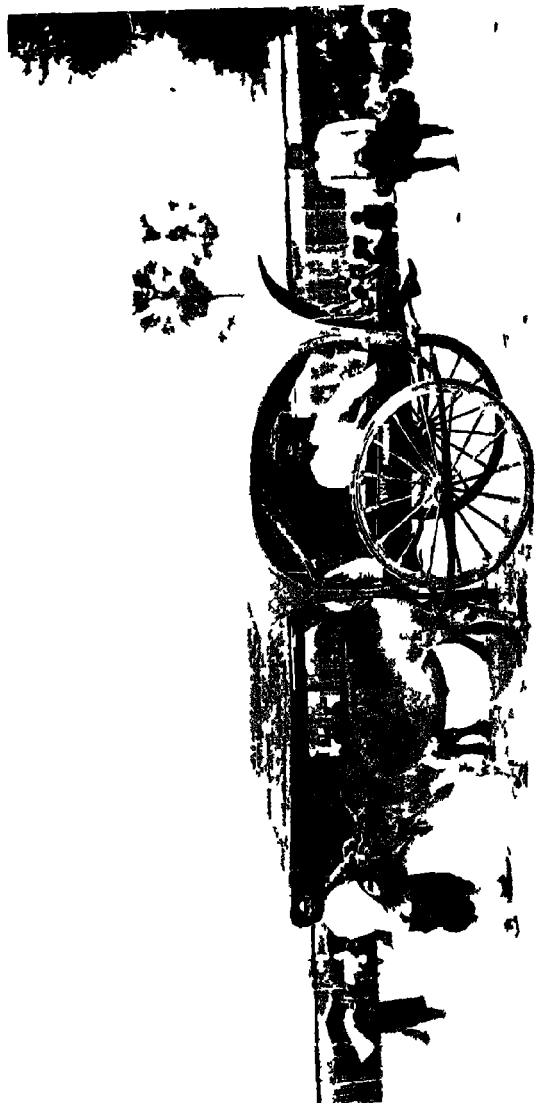
the mud of the fields and dressed in dry clothes, partake of the superior rice and fish of their host, on which they do not fail to compliment him, then, after a smoke, more chaff and perhaps a round or two of semi-improvised verses touching on the incidents of the day, the party breaks up, to meet again and go through the same routine next day. Reaping and winnowing by concerted action are conducted in the same way, when, the weather being fine, the ground reasonably dry and the sexes indiscriminately mingled, there is even more room for jollity than the planting season affords.

In the neighbourhood of the capital the small peasant proprietor tends to disappear, giving place to the great land-owner of the royal family or the nobility, and for this reason (as well as because the farmers round Bangkok are becoming more and more impressed with the advantages of getting the utmost produce out of their land), the old custom of communal labour is falling into disuse, the work being done by large numbers of Lao coolies who came down from the hills every year and hire themselves out for the season.

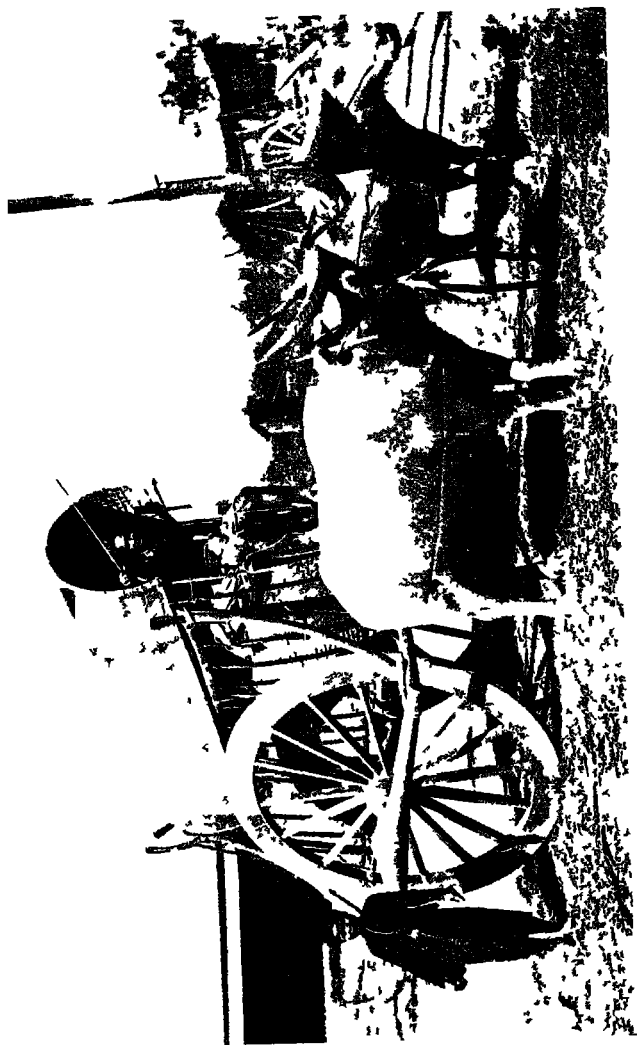
The rice-growing implements in use at the present day differ little, if at all, from those employed by the remote ancestors of the actual occupiers of the land. They consist of a heavy knife with handle at right angles like an English hay-cutting knife, for clearing long grass off the land; the plough, or *tai*, made of two pieces of wood, generally cut by the farmer himself in the nearest jungle, joined together with cane and having the point shod with a small iron share expressively called *Hoa mu* or 'Pig's Head'; the harrow, *krat*, like an exaggerated hay-rake drawn by cattle, upon the back of which the driver stands that his weight may keep the six or eight broad wooden teeth deep in the soil; a planting stick, sometimes used where the water in the fields is too deep for planting to be comfortably done with the hand, merely

a light rod with a forked end to hold the plants ; the hoe, or *chaup*, the same as used elsewhere ; the sledge consisting of a light, neatly made platform mounted on runners, all of bamboo, used only in those parts of the lower plain where, at reaping time, the water is still out or the soil too soft for the wheels of a cart. The knife used for reaping varies greatly in shape in different localities ; the Siamese and Lao use a sickle called *kio*, not unlike the European article but varying in size and shape in each district, while in the southern peninsular provinces there are two forms, one a flat knife set at right angles to the end of a long stick called *penua* in East Coast Malay, and the other a steel blade or cutting edge, set in a thin flat convex-shaped piece of wood about three inches long, pierced at right angles by a small stick. This last is called *kek* in Siamese and *pěngětam* in Malay. It is held in the hand and each individual straw is pressed separately against its cutting edge by the thumb of the operator and so cut through. It is used almost exclusively by women, who are often very expert and get through an astonishing amount of work with it considering its absurd limitations.

The Siamese cart deserves special notice. The bullock-cart, the commonest form of it in most parts of the country, is a well-balanced, trim machine with a large curved tilt of bamboo matting brought well over in front and behind. Two poles, set together in the form of a V, support at their apex the yoke, and near their base the body of the cart, and the axletree is also attached to them. The wheels have rims, spokes and axles of hard redwood, and the axletree protrudes beyond the axles and fits into outriggers attached to the cart fore and aft the wheels, distributing the weight in such manner as to enable the structure to withstand the unlimited bumping and thumping to which it is subjected whether travelling across country or along the rough roads. This outrigger arrangement



THE PRINCE DAWDING IN A LIGHT TUTTLOCK CARRIAGE



A KWIN OR BUTTAO CART CENTRAL SIAM

is probably of Kambodian origin, being found all through that country and Siam, and apparently unknown in the Shan States or Burma. The light carts used as private conveyances are often beautifully built, those of the Chantabun province in particular being highly finished with polished lacquer work. The great *kwien*, or wagon, of the lower plains is a remarkable machine. The form is roughly that of the ordinary bullock-cart, but the V-shaped poles form a smaller angle, the body is long, deep and very narrow and the tilt is not usually brought over in front or behind. The wheels are about seven feet in diameter, the top of the tilt is often as much as ten feet from the ground and the outriggers are enormous, wide-spreading affairs, two or more feet from the body of the cart, and turned up at the ends into fantastic points. A pair of buffaloes is used to draw it, and a *kwien* rolling sedately over the open plain with its body swaying and the great horns of its cattle waving, is an impressive object. With all its appearance of size, however, its carrying capacity scarcely exceeds that of the more modest bullock-cart, since the deep, soft soil which prevails where it is used, forbids anything but a light load. The Siamese cart has usually been built, all but the wheels, by the driver himself and contains no part which cannot soon be replaced, in case of accident, from the nearest patch of jungle. The rim of the wheel has no tyre, but is made in sections dove-tailed into each other and tightened up with wedges. Cane lappings do duty for nails throughout the structure, which is thereby made very strong, but apt to give forth the most fearful groans at every movement. The wheels also, with their wooden axles working on wooden axle-trees, produce piercing shrieks which at times reach far beyond mere noise. The carter loves this music, which frightens off wild beasts and "spooks" along the lonely jungle roads, announces his approach to his far distant friends, and enables him to recognise his own cart

among a thousand. A powerful screech enhances the value of the cart, and tricks are known by which the tones can be arranged to suit different tastes. The traveller's tale of the villagers who tune their cart-wheels before starting on a journey as a violinist tunes his instrument is, however, to be discredited.

The draught-cattle of the country are the ponderous water-buffalo in the lower plains and among the high mountains, and small, lightly-built, skittishly inclined bullocks everywhere else. For ploughing, a single buffalo or a pair of bullocks is used.

Attempts have more than once been made to introduce modern implements and machinery for the cultivation of rice, and scientific farming companies have been started in different localities, but, owing to imperfect management and other causes, these have not succeeded, and melancholy iron ploughs and threshing machines rusting in deserted farmyards are all that now remains of them, the lands they were intended to exploit having long since reverted to the conservative native with his ancient tools. At the present moment, however, the government is taking up the matter of introducing the caterpillar tractor as motive power for agricultural operations, in which, it is thought, may lie a solution of the problem of how to get more land under cultivation with the small available population. Of the innumerable firms in Europe and America that specialised in heavy motor tractors during the war, and afterwards converted their plant to the uses of peace, a not inconsiderable proportion have besought the Siamese Government to try their patent agricultural machines ; but hitherto all have failed to grasp the essential fact that the soil and climate of Siam present conditions quite unlike those that the ordinary agricultural tractor of commerce has been designed to meet. The Government, however, has selected some of the more promising machines and with them is trying, without much good result so far,

PHONG LUANG CHINAI SIAM





A COCONUT PLANTATION SOUTHERN SIAM



A TOBACCO FIELD (see p. 24)

to find success where Burma, French Indo-China and other similarly conditioned countries have admitted failure. So far the one thing that has been conclusively proved is that the wheeled form of tractor is useless for Siamese agriculture.

Coconuts. The coconut-palm was at one time largely grown round Bangkok, and inland in Central Siam but within the last forty years or so, the ravages of the dread coconut-beetle have been so terrible that the trees at one time almost entirely disappeared from that part of the country, so much so that the coconut-palm tax was removed from the revenue schedules and the tree, in fact, written off as an agricultural asset. Yet a reasonable amount of care and forethought are all that was ever required to check the virulence of the coconut beetle, and there is no reason why, with proper precautions, the coconut-palm should not thrive perfectly well in Central Siam.

In Southern Siam near the shores of the Gulf, the coconut has always done well in the past, and the trees, planted in small numbers round or near the houses of the inhabitants, have not hitherto suffered appreciably from beetle. Consistently, however, with the general progress of the country, fairly large areas have recently been taken up in the south by capitalists from Bangkok and elsewhere, and a good deal of new land has been brought under coconuts. And in these the beetle has appeared and is multiplying so fast that if the Government does not insist upon protective measures, the new plantations will probably share the fate that overtook the coconuts of Bangkok. The island of Koh Samui, off the East Coast of Southern Siam is reputed by those who know, to produce coconuts as fine as any in the world, and those of many places on the mainland near by are very little, if at all, inferior.

The coconut-palm prefers a light, sandy soil and in many places on the coast is found growing right on the seashore with its roots washed by the breakers.

The nuts are planted, after being coaxed into sprouting in a damp, shady spot, about twenty-five feet apart, in regular rows, and beyond an occasional clearing of the ground and a periodical search for beetles (usually omitted), receive little subsequent attention. On good soil fruit may be expected when the trees are six years old, but the average age of first bearing is from seven to eight years. The growing of coconuts in small blocks is, perhaps, the easiest form of agriculture in the world. As soon as the trees are high enough the owner builds a house amongst them, and thereafter has little to do beyond shooting the squirrels which damage the fruit at times, and at intervals picking those of the nuts which have begun to turn brown. This latter operation is often performed by monkeys trained for the purpose, a good strong animal, whose education has been well attended to, commanding a high price. The returns of the Department of Agriculture showed the number of coconut trees growing in Southern Siam during 1922 as over five million, of which rather less than half were in bearing. A healthy tree in bearing is calculated to produce fifty nuts per year on the average, and the usual local market price of nuts is, under normal world-conditions, about three ticals, or six shillings, a hundred. Hence the present annual value of the coconuts produced in Southern Siam would appear to be about three million, seven hundred and fifty thousand ticals, or some £400,000, with prospects of considerable future increase. Unfortunately, however, the actual money realised for this produce is but a small fraction of the above-mentioned sum. Where each person possesses a small number of trees which he has all his life regarded merely as a sort of casual adjunct to his larder, the value of the product as an article of commerce has not been properly realised and the greater part of the output is consequently wasted. Enormous numbers of nuts are picked quite unripe for the sake of the

cool sweet liquid that they contain, and are given to the children or, as refreshment, to passers-by in place of a draught of water. From some of the nuts, when ripe, the oil is expressed by an absurdly extravagant process, while from others a small quantity of rich cream is extracted for use in cooking. A few nuts are occasionally bartered for salt and other household requirements, and it is only when the owner of trees finds himself accidentally with a stock of nuts on his hands too large for home consumption that he exerts himself to make a little copra which the nearest Chinese trader will buy from him at half its value or less. The entire output of coir fibre and shell, by-products of value, is of course wasted. It is to be expected, however, that this state of affairs will shortly pass away, and that the new Peninsular Railway, with its accompaniment of cinemas, drink and other blessings of civilisation, for the enjoyment of which cash is necessary will convince the peasant of the high importance of turning as much of his produce as possible into money.

Rubber. In Siam the planting of rubber is an entirely new industry. Though situated close to the Malay States under British protection, the centre of the world's rubber planting industry, and though in daily communication with Singapore, where rubber cultivation in all its aspects has formed the chief topic of conversation ever since 1906, the Siamese only began to realise the true significance of the matter and the importance which it might have for their country, when the best and brightest days of the industry seemed to be passing away. At the time when vast sums of money were being made in British Malaya out of rubber planting, it was popularly supposed that no part of Siam was suitable for the cultivation of rubber trees or adapted for plantation purposes, and it was not until most of the available land in British Malaya had been taken up that investigators discovered in the more southerly districts of Southern

Siam a large area of vacant land admirably suited in every respect for the cultivation of the *Hevea* rubber plant.

By 1920, the returns of the Department of Agriculture showed over fifty thousand acres of land being brought under cultivation with rubber in Southern Siam, but the collapse of the market which occurred at the close of that year caused a complete cessation of planting operations and the partial abandonment of most of the young plantations, before any but a very few of them had begun to produce rubber. When, in course of time, the price of the commodity returns to a profitable level, plantations which were approaching the producing age when deserted will probably be reclaimed and worked, but many thousands of the younger trees will by that time have been lost beyond recovery in the encroaching jungle.

There are many wild rubber-producing trees known in Northern and Southern Siam, all varieties of the 'Rambong,' 'Assam Rubber,' or *Ficus Elastica*. These have not been brought into cultivation, but a certain amount of their produce was collected by the jungle people when prices were good and sold to local traders, who in turn sold it to export merchants in Bangkok. In the jungles of Southern Siam many of the best-known guttapercha-producing trees and climbing-plants are found, and the right to collect the produce of these was periodically sold by auction in former days. At present the industry is in abeyance but, with good prices ruling, would be capable of considerable development.

Pepper. The cultivation of pepper is one of the most ancient agricultural industries of the country. As far back as history goes, it has been an article of export and, in mediæval times, it formed part of the complimentary gifts sent to foreign countries by embassies from the Court of Siam. In the seventeenth century the monopoly of the pepper trade was one

of the chief chronic causes of contention between the foreign merchants in Siam, and it was largely by giving this to the French that Faulkon, shortly before his downfall, hoped to strengthen their position, and incidentally his own, in the country. At that time the output of pepper was probably about three thousand tons a year, and since then it has varied very much, rising at times to more than double that figure and at others sinking to almost nothing. At the present day pepper is grown in various parts of Siam, but chiefly in the Circles of Chantabun and Puket, showing a tendency to increase in the former and to decrease in the latter where it has been ousted by rubber. Political troubles and the fluctuation of prices have been jointly responsible for a continual variation in the quantity of pepper produced. Throughout the seventeenth and eighteenth centuries the price of white pepper seems to have stood at between forty and fifty ticals per picul, Siamese pepper being then accounted the best in the world. In the nineteenth century the price fluctuated much but gradually declined until, in the nineties, it was at times no more than from twenty-five to thirty ticals. Then came a revival which was accentuated by the great war and, in 1919, the price was over sixty ticals, falling in 1920 to about forty, in which year the area under cultivation was about 9,000 acres. In 1922 the price of white pepper was about twenty-one ticals per picul, black pepper was down to ten ticals, and the industry was apparently moribund.

Pepper-growing in Siam is now almost entirely in the hands of Chinese settlers. The cultivation demands a good deal of care and is an expensive form of agriculture. The vines, which are grown on poles set a few feet apart or on shade-trees planted for the purpose, have to be carefully tended and watered, and the intervening ground requires constant weeding. The plant yields fruit at the age of about three years and

when in good condition is very prolific. The leaves are large and glossy and of a dark green colour. The flowers are borne on a raceme on which the berries afterwards cluster thickly. As these enlarge they are thinned out, and the unripe fruit then removed, being dried in the shell, forms the black pepper of commerce. The berries which remain turn a yellowy green or red when ripe and after being dried with the outer shell removed, are termed white pepper, the value of which is nearly double that of black.

Tobacco is grown in several districts, though not much in the central plains. In some localities it is cultivated in the rice-fields during the dry weather, but the best crops are raised in the light, rich, alluvial soil on the banks and islands of the upper reaches of the Menam Chao Phaya and its tributaries. In Northern Siam tobacco is the principal agricultural product after rice. The output of the whole country, which has never been more than sufficient for home consumption, is now far from being so. Once upon a time the whole nation, from the King and his Court downwards, smoked and chewed only the tobacco of the country. It was coarse and bitter as a rule, but certain districts, notably the provinces of Petchabun and Kānburi, produced a fairly good quality, and the output of these places was therefore reserved for the Court. In consequence of the particular attention bestowed on cultivation and preparation for the royal consumption, both the superiority and the quantity of the tobacco of these two localities increased continually so that in time it obtained an almost complete monopoly in the bazaars and markets of the capital, to the material advantage of its growers. But much of this prosperity has now been lost, for though as an adjunct to betel for chewing, these tobaccos are still without rival, the insidious products of the ubiquitous British American Tobacco Company, nowhere more in evidence or better managed than in Siam, have destroyed the smoking taste of the Siamese

for his own home-grown leaf. No longer does the finest Petchabun tobacco, wrapped in scented and delicate sepals of the lotus flower, find favour with the royal palate; no longer at weddings, cremations and other festivities, do Kānburi cigars solace the intervals between chews of betel. The gold-tipped fragrances of Egypt and Turkey and the less refined but still seductive Garrick, Eagle and Wild Woodbine 'gaspers' of the enterprising foreigner, have driven local products far from the capital and the larger towns and are pursuing them relentlessly even to the remotest villages of the interior. Moreover, for chewing purposes the consumption of Siamese tobacco is declining, for the foreign cigarette habit is weaning both sexes of the younger generation from the once universal addiction to the aromatic but enervating quid of betel, lime and tobacco.

The cultivation of Siamese tobacco varies in degree but not in method. The seed is sown in beds and the seedlings are afterwards planted out in prepared ground, two feet or so apart. As the plants grow, the ground is weeded and caterpillars and other insects are removed. Where high quality is desired the above operations are carefully carried out, but where the cultivator is working merely for his own consumption, as is now most usually the case, labour is avoided whenever possible, with the natural consequence that the crop, when it reaches maturity, frequently consists of malformed and stunted plants. The lowest leaves are stripped off the plant as soon as they attain full size, the plant continuing to grow; and this operation is continued until the leaves produced are too small to be worth collecting, when the mutilated stem is left to flower and produce seed as best it can. When still green the leaves are cut up into shreds, very fine for chewing tobacco, and less so for that intended for smoking, and the tobacco thus made is exposed alternately to the sun and dew on mats or racks until gradually cured. Selected samples

of Siamese tobacco have been submitted, from time to time, to the examination of well known experts, but the resulting reports have not been encouraging. It is probable, however, that with better cultivation and with greater care bestowed upon the cutting, drying and curing processes, a tobacco equal to that produced in Burma, India, Java or Borneo could be obtained.

Sugar. Long ago Siam was a great sugar-growing country. In the first half of the nineteenth century this was her principal article of export to Europe, and Sir John Bowring, when he visited Bangkok in 1855, predicted that sugar would soon become the chief agricultural product of the country. His conjectures did not, however, become facts for, in common with other cane-sugar centres, Siam has been hopelessly defeated by beet. Except in the province of Chonburi, near the north-east corner of the Gulf, sugar-cane is now grown only in patches and that for purely local consumption in the raw state or for the making of coarse molasses, and almost the only remains of the once flourishing cane-sugar industry are the melancholy ruins of a number of sugar mills on the banks of the Menam Noi and Nakon Chaisi Rivers, one of which for many years figured in an edifying lawsuit between the Royal Survey Department (the half-ruined chimney thereof was used as a trigonometrical point) and the owner, who demanded an exorbitant rent therefor on pain of removal of his property.

In the Chonburi province, however, cane-sugar cultivation is something rather more than a mere reminiscence, for here a considerable number of small, Chinese-owned plantations are still to be seen. They produce between them annually some twenty-five thousand tons of a dark brown, scarcely crystalline substance, a very under-refined sugar, and a large quantity of molasses, the greater part of which is used in the manufacture of country spirit. Enterprising foreigners have occasionally visited this district with



CRUSHING SUGAR CANE

a view to discovering possibilities of extending cultivation and producing real sugar there, but the suspicious attitude of the present cultivators and the natural reluctance of the Government to give the extensive privileges, almost amounting to monopoly, for which such enthusiasts invariably ask, have hitherto caused them to divert their energies elsewhere.

A good deal of coarse jaggery sugar is extracted from the juice of palmyra and coconut palms, this industry being chiefly noticeable on account of the peculiar method adopted for taxing it in certain districts. Small earthenware pots of a peculiar shape and uniform size are made to the order of the Government, and the makers of unrefined sugar are compelled by law to use these and no other pots, as moulds into which to run their sugar when made. The price of the pots includes the cost of their manufacture and the revenue on the sugar, and severe penalties are imposed on those who expose any sugar for sale otherwise than in the Government pots, or who attempt to manufacture pots of the prescribed shape. In districts where the pot system is not used, jaggery sugar is taxed at so much per tree or per knife used for tapping the juice.

Betelnut. The Areca, or Betelnut, palm is grown in every part of the country, but in few districts is the production sufficient to meet the demand which the chewing proclivities of the Siamese create. In some parts of Southern Siam, however, the supply exceeds the demand, and a certain quantity of betelnut is exported thence to other parts of the Kingdom and to Singapore and Penang. In the suburbs of Bangkok the betelnut palm is grown in gardens, where the trees are planted in orderly rows interplanted with such other fruit-trees as are found to thrive in the thin shade which they cast. In the provinces the trees are grown in rough plantations, round about the houses

of the peasantry, and on any patch of available waste land. With its smooth straight stem, graceful topknot of leaves and hanging bunches of fruit sometimes full sixty feet from the ground, the betel is one of the most graceful of all the palm family. Once planted in a moist situation, it requires absolutely no care, and though it is possible that by selection and manuring the fruit might be improved, the Siamese cultivator has never thought it worth while to take any trouble about it. The betelnut is used fresh, dried or pickled. When fresh, the edible or rather chewable kernel is yellow and soft, when dry it is brown and extremely hard and has to be cut up or pounded before it can be used, and when pickled it is soft and brown and rotten-looking. The trees yield fruit at the end of their third year and bear usually once, but in some places twice, a year, from a hundred to five hundred nuts. There appears to be a steady and constant demand for betelnut both in India and China, and it is probable that plantations of these palms in Southern Siam might be made highly profitable. Hitherto, however, European planters have not taken any interest in this product of agriculture.

Cotton has been cultivated in Siam from time immemorial, all tradition as to whom, and by whom, it was introduced having long been lost. According to De Candolle it seems that cotton is indigenous in Further India as well as in India proper, wherefore it may well be that the cultivated cotton of Siam is descended from a native wild stock. It has been established that cotton clothing was worn in India at least 3,500 years ago and there appears good reason to suppose that the inhabitants of Siam have worn cotton for at least as long a time.

There certainly was a time, before the birth of foreign trade, when the inhabitants of Siam not only spun and wove all the cloth they used for their garments but also produced the raw material from which the cloth

was made. Such material was chiefly cotton, and each community probably grew enough of it to supply its own easily-satisfied requirements. But the Siamese do not seem to have carried the industry, either of cotton-growing or of cloth manufacture, to any high degree of excellence, for the earliest existing records of overseas commerce show that cotton cloth from abroad found a ready sale in Siam on account of its superiority to the rough local produce, while from the moment foreign merchants began to import cotton goods, there set in a decline in the cultivation of cotton in Siam which has continued slowly but steadily ever since. For foreign trade not only brought into the country cloth of fineness, of softness and of colour never seen before but, by providing an export market for all sorts of local commodities, produced also the wealth wherewith such cloth could be bought, and thus, it came about that people of the upper class no longer set their slaves to grow cotton, and that the peasantry within reach of the foreign trader and his goods also gave up the practice. The people of the far interior, however, continued to supply their requirements in cloth from their own resources, the said requirements, though meagre as to quantity, being peculiar as to quality, and the ultra conservative minds of the weavers forbidding them to desert the approved clothing of their forefathers for new-fangled foreign textures and colours. Consequently these continued to grow cotton until finally the guileful trader, knowing that the growing, ginning and spinning of cotton are arduous tasks, and seeing that the Siamese backwoodsmen disliked hard labour as much as other people, introduced to their notice ready-spun cotton yarn from Bombay, Lancashire, and elsewhere. The peasant then discovered that at the trouble of one or two day's cane-cutting or beeswax-collecting, he could make enough money to buy him yarn for a complete family outfit of clothing, whereupon he gave up cotton-planting,

bought foreign yarn and set his women folk to using the same.

Thus cotton growing almost ceased in Siam except amongst the villages of the remotest and wildest hill-tribes, until, a few years ago, Chinese speculators induced cultivators to take it up again for purposes of export.

The two or three varieties of cotton (*gossypium herbaceum*) apparently native to Siam are hardy and prolific, bearing strong but short-stapled fibre about equal, commercially, to the ordinary cotton of India and Burma, that is to say, low-grade. The Department of Agriculture lately raised a certain degree of interest in the product by introducing seed from Kambodia and from India, and also experimental ginning and baling machinery. The Kambodian cotton proved superior to Siamese, and small plots of land came to be planted with it annually here and there, of which the total area reached some 10,000 acres in the year 1914. But the outbreak of war depressed the local cotton market so heavily that the peasants received next to nothing for their 1915 crop, with the result that, though prices soared in the subsequent years of the war, they were not easily to be persuaded into occupying themselves with this product any more. In the year 1920 some few were prevailed upon to try again, just in time to be caught and practically ruined by the universal slump which overtook the world in the autumn of that year.

There are large areas in several districts of Siam, at present almost, if not entirely, uncultivated, on which cotton could be grown in normal times to better profit than anything else. This land, as communications improve and population increases, will certainly be brought under the plough some day, but it will then with almost equal certainty be made into rice fields, for which it is not so well suited, for the reason that the peasant has usually only one idea about agriculture

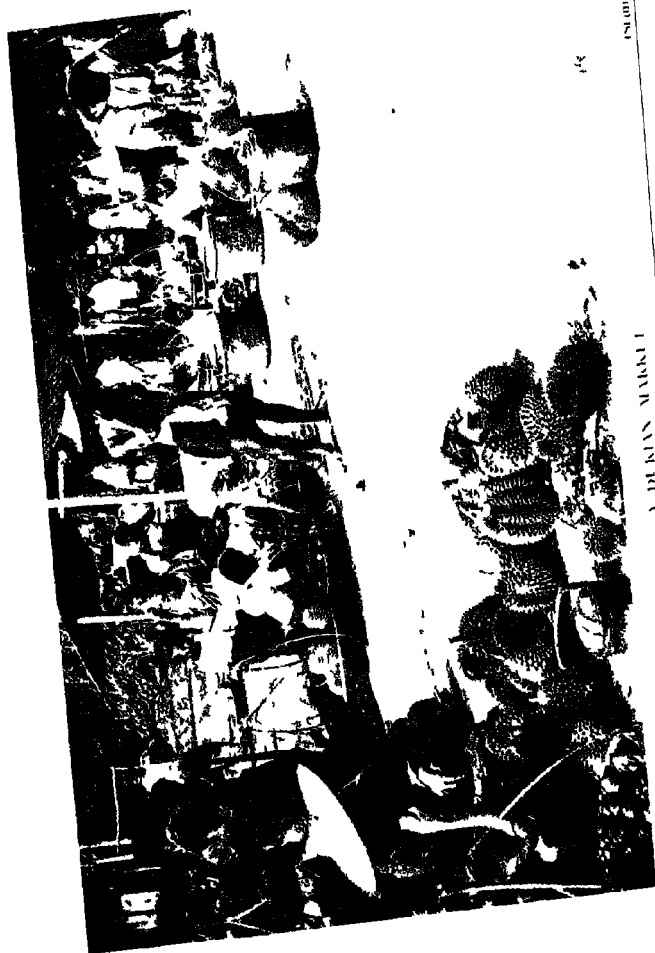
in his head, which is to plant rice, while neither the Government nor any one else has hitherto thought it worth while to attempt to educate him seriously up to anything different.

Several kinds of cotton-producing trees of the *bombaceæ* family grow wild in Siam, and one, *Ceiba pentandra*, or *Bombax pentandra*, is cultivated, or at least is allowed to grow, in gardens and round about villages for the sake of its floss, known in Siamese as *nun* and to commerce as kapok. Siam does not, however, contribute to the world supply of this fibre, and it is only since 1919 that any attempt has been made to produce more of it than suffices for immediate local or family needs. It is easy to cultivate and many parts of the country seem peculiarly adapted for its growth, so that there may be a future for this product in Siam when it obtains more recognition there.

Sesamum. The cultivation of this plant, though not nearly so extensive as it might be, has increased considerably of late. In 1910 the area under Sesamum was estimated at not more than 5,000 acres. In 1920 it had risen to 16,000 acres. The plant is usually grown in rice fields during the early part of the year and is got off the land in time for the planting of the rice crop. It is valued for the oil contained in the seed, which is extracted by means of rough wooden presses worked by hand or by bullock power. The oil is used for cooking, more especially in those parts of the country where coconut oil is not easily obtainable. The residue, after the oil has been extracted, is used for feeding cattle and as a fertilizer. A certain amount of unpressed seed (about 1,000 tons) is annually exported to China, where it is much used in the confection of cakes and sweetmeats. The plant yields a gross profit to the cultivator of about £5 per acre, and nothing but the lethargy of the Siamese peasant prevents its being grown in this country to the same

extent as is the case in India, Java, Burma and other neighbouring countries.

General. The remaining vegetable products of Siam may be classed rather as horticultural than as agricultural produce. Pulse of various kinds, onions, maize and millet are grown to a certain extent in fields, but more often in small garden patches. A few hundred tons of beans and onions are annually available for export. Maize and millet are grown for home consumption only. The betel vine, *phu*, called in Malaya *sirih* and in India *pan*, the leaf of which is chewed with the betelnut, is largely grown in gardens, more especially in the neighbourhood of Bangkok where the consumption of it, though declining, is so great that one large market is devoted entirely to its sale. The vine requires much care, yields leaves fit for use when about a year old, and continues to do so for about five years, at the end of which time the foliage becomes small and of too strong a flavour to be of value. Cardamoms are grown in and exported from the Chantabun district, and nutmegs are cultivated in Southern Siam. Hemp is cultivated here and there, and no restriction is placed upon the sale and consumption of this as a drug, a fact which makes one of the numerous attractions which this country has for the low-class natives of India found scattered throughout the land. Yams and gourds of many kinds are grown in garden patches, and chillies and the egg-plant or 'brinjal' are to be found in most villages. Tapioca is a common article of both garden and field produce in the south, and indigo is grown in small quantities in various parts. The fruits of Siam are very numerous in kind and abundant in quantity. They include durians and mangosteens, mangoes, pineapples, and a great variety of bananas; oranges and pummelos of many kinds; custard-apples and bullock-hearts, grenadillas and soursops, jackfruit, litchis, tamarinds and guavas; maprang or marion, ngok or





IRRIGATION OF RICE FIELDS OLD STYLE



IRRIGATED RICE FIELDS.

rambutan, langsung, kratorn, and many others. The orchards round Bangkok are well kept and highly profitable, and more care seems to be given to fruit-growing in Siam than is the case in many other tropical countries.

IRRIGATION WORKS.

The theory of the irrigation of crops has been understood and practised in Siam from the remotest times. All over the table-land of Eastern Siam are to be found relics in stone of the dams, channels and sluices, each with a shrine for the convenience of its guardian spirit, by means of which rain water was collected for distribution over the land. Such remains, of ancient Kambodian origin, indicate works, sometimes of enormous dimensions but more usually quite small, constructed on true scientific principles and often with a careful elaboration of ornament that is proof of the importance with which they were regarded. These ancient works are all useless ruins to-day, and are feared and shunned by the present inhabitants of the lands they once fertilised, who believe them to be the work of supernatural beings. Nevertheless, irrigation is still practised there, the people building small temporary dams each year of bamboo and earth, and of just enough strength to hold up rainwater sufficient for their meagre requirements.

In Northern Siam, where the valleys and plains have a considerable slope and are watered by more or less rapid streams, irrigation by weirs has been carried on from time immemorial and though none but small and temporary works exist, practically the whole cultivated area of this part receives a controlled water supply. The irrigation work most usually met with is a light, low weir made of bamboo screens and palm leaves, held in position by a few stout posts and thrown across a river when the water is at its normal, dry

weather level. This obstruction raises the water perhaps a foot, perhaps less, just enough to supply a constant stream of water to a channel cut in the side of the steep bank and running alongside the river until, the river-bed sloping more sharply than the channel, it finally arrives at the top of the bank and flows away into channels which distribute it over the land. From February to June such a work will supply a steady stream of water which may be used for orchard irrigation, for early crops of tobacco, sesamum, beans, etc., and which sees the farmer through the early stages of the main rice-crop cultivation. The first serious rise of the river washes away the weir and obliterates the take-off channel, but by that time the rains should have come and irrigation water be no longer required, in which case the peasant contemplates the demolition of his works and the necessity for their reconstruction next year with no concern at all, such being the recognised order of events. These smaller weirs are usually made by communal effort of those who benefit thereby, but a larger sort, rather more permanent in structure and sometimes irrigating as much as a couple of thousand acres, are often recognised as in some sort the property of one or other of the many chieftains who still form the local aristocracy, though they no longer rule and who, in return for moderate assistance given in building and repairing the works, such as the provision of food for the labourers, receive a portion of the harvest of all the lands irrigated by them. Here and there, as in the case of the *Fai Luang*, or 'Royal Dam,' of Laplè, the State has taken charge of the weirs and converted them from temporary to permanent structures, very much to the advantage of the landowners deriving water therefrom.

Garden irrigation is obtained by the riparian dwellers in most up-country districts by a tall wheel, turned by the force of the river current in which it is placed, and raising water in bamboo troughs attached

to the wheel, which spill their contents into light conduit pipes as the wheel revolves. Of these many hundreds are to be seen on the rivers of Northern Siam, especially at the low-water season, all light temporary erections which have to be remade every year.

On the great plains of Central Siam, where the main rice crops are grown, there has hitherto been no real irrigation. True, the network of creeks and channels elsewhere referred to as existing in this part have given access to lands formerly uninhabitable for want of communication, and, by admitting the flood waters of the river on to the said lands to supplement the local rainfall, have rendered the cultivation of rice possible on a considerable part of them, but these, though excellent waterways, are not irrigation works, since they neither bring the water to the land at such an elevation as to allow of its distribution over the fields at any time when required, nor do they, in any but the most inadequate way, enable the flood-waters which they introduce (sometimes with disastrous effect), to return to the rivers from which they have come. They are, in fact, mere inundation canals, and though, in a year of sufficient rainfall and of average flood, they are of assistance to the crops, they are of small use in averting loss in the bad years when rainfall and flood are deficient or excessive. The largest of these canals constructed within recent years, the Rangsit System, opened in 1896, brought under cultivation about three hundred and fifty thousand acres of first-rate rice-land and incidentally made the fortunes of the concessionaires, one of whom, a European whose career opened behind the counter of a Bangkok chemist's shop, is now a large landed proprietor in his own country.

Many rude implements have been devised for raising water from the canals on to the fields, implements which, when water is only slightly deficient, enable the cultivator to supplement the supply, and

to tide over short spells of drought, but which, in the event of serious failure, are powerless to arrest total loss of crop. Of these the commonest is a long-handled basket-shaped shovel of bamboo wicker-work, suspended from the apex of a tripod and just touching the surface of the water brought in a small channel to the dammed edge of the field to be irrigated. The operator pushes the shovel backwards and forwards through the arc of a circle, and at each push shovels up about a gallon of water and discharges it over the little dam and on to his land. Sometimes the shovel, instead of hanging from a tripod, is suspended by ropes between two men standing on either side of the channel and is swung backwards and forwards by them, at each swing picking up and discharging a shovelful of water. In years when the rainfall is insufficient the efforts of the peasantry to save their crops by means of these absurdly inadequate instruments, with the hot sun scorching the rice-plants and pitilessly drying up the tiny rivulet made with so much exertion, are at once ridiculous and pathetic. A rather more satisfactory implement is a kind of tread-mill where two men, walking on pedals fixed to the axle bar, revolve a wheel on which runs an endless band furnished with paddles or scoops which, passing upwards through an inclined trough, one end of which is in the water while the other protrudes on to the field to be irrigated, raise and pour out a small but constant stream of water. In some districts a very primitive form of windmill is used to raise water by turning a paddle-wheel set in a narrow channel, but this is a very inadequate machine and modern windmill pumps that have been tried have so far proved useless, the tropical winds being found too capricious for the maintenance of a flow of water large enough and regular enough to constitute a dependable supply for the fields.

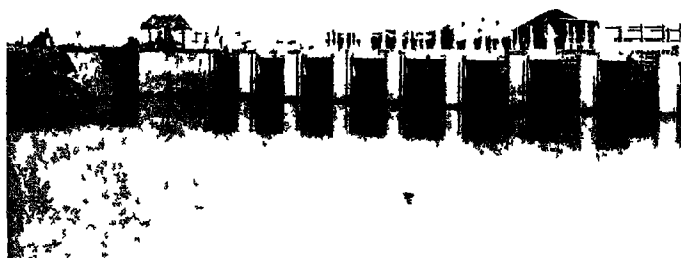
It is many years since the Government first became



IRRIGATION BARRAGE PASAK RIVER

(Opened 1922)

[Photo 1 Irrigation Dept]



THI PASAK SOUTH IRRIGATION CANAL REGULATOR

[Photo 1 Irrigation Dept]



POH LPMU FISHING STAKES NETTING THE ENCLOSURE

[Pool McBeth]



SEA FISHING BOATS IN HARBOUR BANG PLASSI

aware that the time was approaching when cultivation according to the primitive methods of the ancients could no longer suffice for the needs of the State and when the great question of irrigation would have to be considered seriously. The matter was much debated and the above-mentioned Rang Sit concession, an outcome of early deliberations, was at first believed to be a solution of the difficulty. It was thought that the system would supply all requirements, and that it might in time be extended to cover the greater part of the plains of Central Siam. A few years' experience, however, made it apparent that the difficulty was not thus easily to be surmounted. The lands thereby brought under cultivation, though more prolific than most other parts, were found to be by no means rendered immune, by virtue of the lock-gates confining the waters of the new canals, from the vicissitudes caused by the excessive or deficient rainfall, while it was noticeable that by the rapid silting up of the new canals, lands opened up by the system soon became once more cut off and inaccessible. It was found, indeed, that the best of inundation canals did not much improve matters, and it became increasingly evident that by true irrigation alone could the desired development be attained. After this failure of practical experiment the question once more became academic, and continued to be discussed spasmodically for some years during which matters went from bad to worse, the existing canals being entirely neglected and allowed to silt up to such an extent as largely to discount the annual increase in the rice production of the country which should have resulted from an improving revenue and police administration. At length the Government took the step of procuring the assistance of a European irrigation expert to report on the situation and founded the Royal Irrigation Department, the vicissitudes and ultimate success of which have been detailed in the chapter on "Government" above.

FISHERIES AND FISHING.

As every meal which a Siamese eats, from the time of his weaning till death puts an end to his earthly career, consists principally of rice, so almost every mouthful of rice is made palatable and helped down by fish in some form or other. Fresh, salt, dried, pickled and decayed, are some of the forms in which, roasted, fried, boiled or raw, almost every creature of the water is daily assimilated by high and low, rich and poor. The Buddhist teachings deprecate the destruction of any form of animal life and the Siamese cosmology provides a special place of future punishment for the breakers of this law, with a department reserved for the peculiar treatment of those who destroy fish or who sanction the destruction thereof. But since man must live and a continual diet of plain boiled rice, even if eked out with other vegetable matter, is neither nourishing nor interesting, popular opinion has long since sanctioned an evasion of the law and, under the specious pretence that the taking of fish from the water and their subsequent loss of life are not strictly cause and effect, a considerable percentage of the population make a living by catching fish, and the whole nation eats it and hopes for the best. Not the least important of recent administrative reforms of Siam has been the passing of a very complete and comprehensive Fisheries Act, regulating the methods by which, the times when, and the places at which, fishing may be carried on, and incidentally fixing the revenues payable by fishermen of every degree. Prior to the passing of this law the fisheries constituted a State monopoly and were farmed out to wealthy Chinese, whose methods of sub-letting their rights and collecting their rents and duties left very much to be desired and were the causes of frequent complaints of injustice as well as of occasional disturbances of the peace. The new Act has proved of great benefit to the public and under its provisions all branches of the industry are extending.

Sea-fishing is carried on all round the coast of the Gulf but assumes its greatest importance in the shallow waters near the northern shores.

The Fisheries Act contains an interminable list of nets and traps for the using of which licenses of different values are necessary. The most productive of all traps is the *poh lemu*, constructed in the sea in about twelve feet of water and consisting of two long converging lines of stakes, the narrow opening at one end of which leads into a ring of stakes and bamboo screens enclosing an acre or more of water. Shoals of fish, more especially the *pla tu*, a small species of pilchard, are guided by the avenues of stakes into the confined space where the fish assemble, sometimes in enormous numbers, and whence, all egress having been stopped by nets, they are removed by the fishermen at regular intervals. These, however, are by no means the only fishing-stakes to be seen in the waters of the gulf. Outside the wide mouths of the rivers converging lines of poles are planted, each pair of lines ending in a couple of stout posts to which, when the tide is on the turn, a bag-net, sometimes exceeding a hundred feet in length, is attached, and into this fish of all kinds and also innumerable prawns, crabs, cuttle-fish and other queer creatures, are carried by the fast flowing waters. In other places the shallow sea is planted thick with thin poles, apparently at random, which, shortly after immersion, become encrusted from the bottom to the surface of the water with a large kind of mussel, very much prized as food. In other places, again, long sticks passed through the centre of a small, flat, circular net with a cane rim, are planted out in rows, the nets resting on the sea bottom and having a piece of bait in each. These contrivances are taken up every evening and usually each one brings to the surface one or more large crabs which are sold alive in the markets.

Poh lemu fishing is always something of a gamble. The construction of the traps and drying apparatus

are costly operations and a large staff of fishermen must be engaged and partly paid in advance at the beginning of the year. If the season is a good one, all is well; the traps are filled with fish every day, the drying sheds are never empty and the fortunate speculator ships cargo after cargo, in steamer and junk, away to Bangkok, Singapore or China. Sometimes, however, the *pla tu*, for reasons at present unknown, arrive only in small shoals or fail altogether to put in an appearance, in which cases the end of the season finds the lessees of the fishing only just able to cover their outlay or altogether broke. The very precariousness of the industry, however, has charms for the hazard-loving Chinese who usually finance it, and with the opening of each new season there is no lack of speculators ready to try their luck.

Further down the gulf the use of fishing stakes is restricted by the depth of the water to the estuaries of the rivers, and here seining becomes the most important branch of the industry. From every river mouth along the coast there issues at break of day, all through the fishing season, a fleet of boats which sails away on the morning breezes, out to the fishing grounds beyond the horizon. Each river has its own peculiar shape of boat, and the coasting trader of experience can mark his whereabouts to within a few miles by merely noting the rig of the fleet through which his vessel may chance to be passing. Nets of all sorts and sizes are used by these deep-sea fishers, the largest being the *uan*, which is worked by twenty men or more. On the western side of the gulf the boats which carry these great nets are frequently accompanied to sea by one or more men whose business it is to discover the exact whereabouts of the fish, and who, on arriving at the fishing grounds, leave the boat, each in a tiny canoe and, paddling swiftly away, presently slip overboard and disappear. Down in the green depths these divers can, if fairly expert, both see and

hear the fish if there is a shoal in the immediate neighbourhood, and one of them having done so, at once rises to the surface and indicates by signs the presence and size of the shoal and the direction in which it is travelling. No sooner are such signals perceived on board the waiting vessel than every man jumps to his place and seizes his paddle, when, with admirably-timed stroke, the great boat is driven plunging through the water, describing a wide circle round the diver and paying out net as it goes. When the circle is complete all hands assist in drawing the net, and if a good shoal has been enclosed, the wildest excitement prevails as the confined space contracts. In mighty hauls the net comes on board, and with yells of triumph and delight the fishermen knock the larger fish on the head as they flounder and tumble in the foaming water. Flocks of sea-gulls, attracted by the commotion, hover overhead, darting every now and then upon the seething mass within the nets and carrying off a silvery prize to be devoured at a distance with much squabbling and outcry. The sea breeze which springs up about midday gives the signal for the return of the fleet shorewards.

On the tops of the high *Casuarina* trees that line the seashore, sit the great fishing eagles, or ospreys, which the Siamese call *awk*. Experience has taught these birds a trick worth two of their natural habit of circling over the seas all day on the off chance of surprising an unwary fish. They simply sit and watch the thin masts of the hull-down fishing boats bobbing on the horizon and, as soon as they see sails going up on these, they leave their high perches and, crying "Awk, Awk," sail leisurely out, sure of a meal of offal and other tit-bits to be picked up without trouble in the wake of the incoming boats. The villagers down below, to whom the boats are quite invisible, know from the action of these birds, when their friends are returning.

The wind freshens as the boats near the land, and

is usually blowing strong when they dash over the foaming bar and into the smooth waters of their native river, bringing the result of the day's work to the wharves of the fish buyers, usually Chinese, where it is appraised, bid for and ultimately bought and delivered over to the pickling tubs, perhaps before nightfall.

Line fishing in the sea has a considerable number of followers, more especially on the southern coasts. It is usually done from small canoes holding two men, and very large catches are often made.

The setting of night-lines for sharks and rays is a special branch of the fishing industry. A long line of very strong cord is used with hooks placed at intervals along it. Each end is attached to heavy weights which are sunk to the bottom and marked by buoys. The lines are visited at intervals by a stout sailing-boat manned by a strong crew, when, seeing that sharks and swordfish sometimes here attain a length of twenty feet and rays a breadth of twelve feet across the body, a sport is frequently had which roughly tests both vessel and men. The flesh of these monsters of the deep is cured and exported to China, the Siamese themselves not being very partial to this form of diet, though sharks' fins, for their supposed medicinal properties, are much in request.

For a few days during the months of April or May, the waters of the gulf swarm with a small species of squid, the taking and eating of which keeps all the seaside dwellers busy. At this time every one who owns a boat of any degree of seaworthiness puts off from the shore in it at nightfall with a hand-net and a few resin torches. A mile or so from the shore the squid are found floating on the surface in thousands, and there the fishers stop and spend the night scooping up the repulsive-looking but tasty morsels, by the light of the smoky torches, as fast as they can work their arms. At this season most of the maritime population suffer

internal qualms and pains resulting from an intensive diet of squid, which, however, they cheerfully endure as the price of indulgence in what they consider to be their greatest luxury.

Drying, curing and pickling is far from the least arduous part of the fishing industry. Most owners of *poh lemu* have their own outfit of drying stages, pickling vats and salting pits, but fishers by other methods usually sell their catch to the factories. After the arrival, sale and unloading of a catch, it is inspected without loss of time by certain old ladies, the leaders of gangs of female fish-cleaners, who bid against each other for the right to prepare it for curing. A bargain having been struck at the best possible figure, the operator calls her following around her and attacks the great heap of fish forthwith, beheading, ripping and cleaning with extraordinary dexterity. Meanwhile the pickling vats are got ready by the simple process of stirring up the noisome fluid contained in the tubs, which is seemingly never changed from the beginning of the season to the end. A little more water is added, and the fish, as they are cleaned, are packed away therein, each layer being sprinkled with salt, slices of lemon, pepper, etc. Twenty-four hours in the vats, and the fish are removed and spread on a series of screens made of long strips of bamboo. These are laid out in the sun on trestles, and after one day's exposure the fish is usually considered sufficiently dried. Should the day be cloudy, however, and a further exposure therefore rendered necessary, the screens are rolled up with the fish still upon them and stored until next day. The final operation is the packing, the fish being pressed down tight into wooden packing cases or into large round baskets which are sewn up with cane strips and rolled into a corner to await export. The amount of miscellaneous fish cured and dried on the coast is not less than 40,000 tons in a good year, of which some 20,000 tons are consumed in the country and the

remainder shipped via Singapore and Hongkong to China.

The article thus roughly manufactured is, as may be expected, of an indifferent quality and subject to rapid deterioration. It suffices, however, for the needs of the people and apparently also for those of the peasantry of China by whom nearly all that is exported is eaten. A superior quality is procurable in small quantities, but even this is much inferior to the cured fish of Europe.

Kapi, a condiment used very largely in Siamese food preparation, is a fish-paste made of all kinds of fish when too small or too bony to be otherwise used. It is, in fact, a by-product of the fishing industry, the wooden kapi-trough serving as receptacle for all the scraps and oddments and for the rare and wonderful marine creatures other than ordinary fish which the nets bring in. The contents of the trough are pounded and kneaded, the latter operation being often performed by the feet of the compounder, and when the mess thus formed is half dry, the process is repeated with the addition of a liberal quantity of salt, when the whole is allowed to stand and ferment. The result is a purple-gray paste containing a good deal of sand and giving off an odour which to the unaccustomed nostril is of a peculiarly nauseating property. This paste is either made into little flat cakes and dried, or is stored in the wet state in jars. In these forms *kapi* finds its way into the farthest inland corners of the country, where its bouquet permeates the atmosphere of the rural bazaars and, at the hours of cooking, proclaims its widespread use as a flavouring essence. A superior quality of *kapi*, free from sand and made of pounded and putrid prawns, finds favour with the more refined classes, while a peculiar *sauce piquante* made from *kapi* and chillies is a condiment used by all Siamese. The *kapi* of the Siamese and the *ngapi* of the Burmese are identical in all but the name, and very nearly in that. At times,

in places far distant from the sea, the stock of *kapi* gives out, but the countryman, unwilling to forgo his favourite relish, substitutes a mess of rotten beans, similar though somewhat inferior to *kapi* in taste and falling very little short of it in the matter of smell.

The Inland Fisheries are almost more productive than those of the sea. The rivers and canals swarm with fish all the year round, while the broad marshes and even the rice-fields, though for the most part quite dry during half the year, are found to be teeming with aquatic life as soon as the waters are out. The problem which is annually presented by the presence of fish, often of great size, in marshes and pools which, dry for many months, receive their only supply of water from the rainfall, is one which has been pondered by many people and sometimes with astonishing results. But whether it be accepted that the spawn is dropped by birds passing over the water and develops instantly into fish of the largest size, or that the fish walk laboriously overland from distant waters (and several species can, in fact, do this to some slight extent), or whether both fish and spawn of certain kinds remain buried in the mud during the dry season without loss of vitality, the fact remains that swamps that are quite dry for months every year and have no connection with the rivers, do contain in the rainy season vast quantities of carp and cat-fish of sorts, snake-headed fish, eels and many other kinds, a never-failing food supply for the people and a source of considerable revenue to the Government.

The schedule of implements with which freshwater fish are caught occupies many pages of the Fisheries Act and even then does not include them all, many of the least important being exempted from the restrictions of the law. Indeed the ingenuity of man has for ages been exercised continuously in this country in devising methods of securing an adequate supply of fishy food, and all sorts and variations of nets,

traps and hooks are the present-day results. Most of the great inland swamp fisheries are leased by the Government annually, and these are therefore closed to the general public, but in the rivers and canals any one may fish to his heart's content, provided one has furnished oneself with a licence covering the particular implement to the use of which one is addicted.

The seine net is used in the rivers, chiefly on the middle reaches where there are many sandbanks on which the fishermen camp out and erect their drying and curing apparatus. The most common and perhaps the most profitable of large nets is the bag-net called *pông pang* which is worked in the main rivers where the ebb and flow of the tide is strong. A row of stout posts strengthened with guy-ropes is planted in the stream and to these the nets are attached in sets of from four to twelve 'mouths,' stretching sometimes more than half-way across the river. The opening of each net is some six yards across, the body is very long, sometimes over thirty yards, and ends in a bag of cloth or in a sort of elongated wooden barrel. The nets are set at the turn of the tide and are taken up at the slack.

The *chaun yai* or 'great spoon' is another large net used in the main rivers. This is a triangular affair composed of two long and strong bamboos fastened together at one end to form an angle of about forty-five degrees, with a heavy net stretched between. It is worked from a boat anchored broadside-on in mid-stream, being thrust down into the water to form a triangular barrier with the base, some forty feet across, on the bottom, and the apex at the gunwale of the boat. At intervals it is laboriously spooned up against the current, when any fish it may contain are deftly jerked to the apex and thence into the boat. The *chaun lek* or 'small spoon' resembles an ordinary shrimp net both in appearance and in the manner of using.

Another common form of appliance is a square net supported at each corner by two rods which cross at



A LAO FISHING PARTY.



FISHING CHING MAI DISTRICT



THROWING THE CASTING NET



DRAWING IN THE CASTING NET

right angles in the middle, at which point they are attached to a rope whereby the apparatus is suspended from a pole. These are of all sizes and are used everywhere. They are lowered into the water, and after an interval raised again, ensnaring any fish which happen to be passing over them at the time. In the largest the pole is fixed on the bank, whence it protrudes over the water, and a high platform is erected above it where sits the fisherman, watching for the fish to come over the net and keeping his hand on a windlass ready to haul up at a moment's notice. The smallest are about two yards square and hang like an inverted open umbrella from a short stick held by the operator. Nets very much resembling these are used on the canals in Holland. The *uan lak* or 'drag net' is a plain oblong net stretched between two sticks and held vertically extended by two or more men who draw it at full stretch through the water.

From a pole at the door of almost every riverside house and from the mast of most river boats a fine-meshed net is often to be seen hanging to dry in the sun. This is the *hè taut* or 'casting net,' used throughout Further India and perhaps most common about the waters of Central Siam. It is not usually kept as a means by which a permanent livelihood may be earned but is rather a sporting requisite, or the means of procuring an occasional dish of fresh fish when other sources of supply are not available. The net is circular in shape and varies from six to about twenty feet in diameter. Round the rim, which is turned inwards and looped up here and there, is sewn a leaden chain, and to the centre a long cord is fastened. The fisherman holds the loose end of this cord in his hand or ties it round his wrist, takes up the net fold by fold in his two hands with the slack thrown over one arm and, standing in the bows of his canoe, casts it out with a long swinging motion so that it falls fully spread upon the water. The weight of the rim causes the net immediately to

assume the form of a bell and to sink in this shape to the bottom, enclosing any fish which may happen to be beneath it when it falls. By drawing gently on the central cord the bell is closed up and the fish are detained by the looped rim and drawn into the boat. This net is also used in the shallow streams of the north where it is cast from the bank. The action of casting is one of the most graceful imaginable, and looks as easy as it is graceful, but the novice will find at the cost of frequent duckings, that, in common with many other simple-looking accomplishments, much practice is necessary before proficiency can be acquired. By the annual payment of from two to five ticals, the fee depending on the size of the net, the right may be acquired to use a casting net in any unreserved water.

Along the banks of some of the larger canals there grow extensive patches of floating weed which are the known resort of many kinds of fish, and the fishing rights over these command a high price. On stated occasions the fortunate lessee calls his friends together to assist at a battue of the fish beneath his weed patches. Having enclosed this space with bamboo screens, and cleaned away the weeds, men, women, and children, armed with nets, fish-spears, baskets and other contrivances, jump into the water and, with much shouting and laughter, catch and throw out the fish, of which a shining heap soon accumulates on the bank, to be packed in boats and sent off to the nearest market.

Here and there among the rice-fields the owners dig pits in which, as the flood waters recede, great numbers of fish seek refuge. The increasing heat evaporates the water until only a thick solution of wallowing fish and slimy mud remains. Then comes along a stout Chinaman who inspects the mixture, strikes a bargain with the owner, bales the whole 'boiling' into his boats, and departs with it, all alive, to Bangkok.

Persons of discrimination breed the fish called *pla taypo*, reputed the very best eating of all Siamese

fish, in special tanks made for the purpose. The fish is a very superior scaleless mud-fish and, on account of its superiority and comparative rarity, is usually reserved for the tables of the wealthy.

Rod and line fishing is practised throughout the kingdom, but the number of people who earn a living by this means only is small and seems usually to consist of old men and women who are past other work. As a rule the gentle art of angling is followed as an easy and pleasant way of assisting the larder, but, though its exponents undoubtedly derive a keen pleasure from their occupation, it is not at any time indulged in as a pastime merely and nothing more.

In the canals and meres of Central Siam the ubiquitous *pla chawn*, a delectable food in Siamese estimation, is taken with the angle, the fisherman standing on the bank and using a strong eighteen-foot rod, a short line, and a live frog as bait. On the deep rivers during the dry weather, canoes, each containing a solitary fisherman, are to be seen anchored by a stone beneath a shady clump of bamboos or drifting with the current in midstream. Their occupant uses a short rod and long line and has recourse to various means for calling the attention of the fish to his bait, such as beating a small tin can with a stick or gently splashing the water with his hand. The fish, quite accustomed to the continual presence of boats and men upon the surface of the waters, far from being frightened by such noise and commotion, are attracted to the spot whence these proceed, apparently aware that such phenomena are frequently accompanied by the appearance of scraps of boiled rice or other food in the immediate neighbourhood. In the rapid currents of the hill streams, an artistic method of dapping with a grasshopper is often very deadly, while large numbers of small fish are taken with a short whippy rod and caddisworm bait. The European angler has done little or nothing in Siamese waters, though in the rivers

of Northern Siam it is probable that good sport could be had with fly and spoon. Trimmers of various kinds, constructed of short lengths of bamboo, or of dried gourds, are commonly used, and night-lines with a number of baited hooks are set in all the lakes and marshes.

Of fish-traps the variety is endless, perhaps the commonest being a mere clump of bushes stuck in the river and daily surrounded with bamboo screens and searched for the fish which use it as a refuge or a resting-place. Cage-traps, on the principle of the English eel-pot, are of many designs and are used under the banks of all rivers and canals and in the channels in the rice-fields. Traps with a falling door are set in the vicinity of riverside villages, and weirs full of inviting passages leading into cages of various shapes and degrees of ingenuity are placed across the mouths of the smaller streams. A quaint device consists of a canoe with a broad, white plank along the side and slanting downwards and outwards from the gunwale into the water, which is paddled gently along the inland creeks near the water's edge at low tide, when many fish lie up in the shallows. These, surprised by the boat gliding between themselves and the safety of deep water, dash violently out and, striking the submerged plank, slide up it and into the boat where they are instantly knocked on the head by the watchful sportsman. When the tide is low in the creeks near the sea and only a shallow stream courses along the middle of the muddy bottoms, troops of young men and maidens come splashing down them, each one carrying a bell-shaped basket some two feet wide at the mouth, which they dump down into the water at every likely spot, thereupon thrusting an arm through a hole at the top and searching the interior for cat-fish, prawns, *pla chawn* or other mud-loving creatures. With much laughter and talking, and plastered with wet mud from top to toe, the fishers hurry along, vying with each other



CATCHING SMALL FRY WITH THE HELP OF BASKETS



CATCHING MUD-FISH IN TIDAL WATERS.

for the likeliest spots and all intent on filling the small creels carried on the back, before night or the tide overtakes them. Along the north country streams a series of dams, one behind the other, is sometimes constructed, each dam having a single opening above which is built a platform with a little hut. On these the fishermen camp out, relieving each other in turn at the duty of staring down into the clear water as it rushes through the channel, and capturing with a hand-net or a spear the fish which attempt to pass through. An apparently wearisome occupation this, but one which seems to afford amusement and presumably also a meagre sustenance to its votaries.

There is no close time for fish in Siam and the campaign against them is only intermitted when water is absent in which to prosecute it. Until recently it was confidently supposed that, because the numbers of fish that are caught and devoured by men are small in comparison with the teeming millions that escape his artifices, there could be no danger that the supply might ever become exhausted or be even noticeably reduced. But there is now evidence to show that such confidence is misplaced and that new forces other than human consumption have to be reckoned with, which, if not checked or counteracted, may before long affect somewhat gravely this source of the people's food. Twenty years of the present century have seen a great and continuous increase in the area of cultivated land, more especially in the central plains, and this has caused the draining of miles of marshes and swamps formerly the home of countless multitudes of fish. Again, the Royal Irrigation Department, with its control of waters in the interests of cultivation, has done something, and is destined to do more, to curtail the fish-breeding places and feeding waters of the lower plains. A certain lack of elasticity in the control and working of the greater leased fisheries may also be said to have

exercised, within recent years, a retarding influence on the methods of nature for the maintenance of aquatic life, while there appears to be little doubt that the phenomenal growth of *Eichornia speciosa*, the Water Hyacinth, that has appeared during the last decade or so on the waters of every part of the country and in places has choked up waterways and covered the entire surface of wide lakes, has caused a diminution in the numbers of certain species of air-breathing fishes.

It therefore seems that, sooner or later, artificial means for ensuring the breeding and maintenance of freshwater fish will be found necessary, and the Ministry of Lands and Agriculture is, in fact, taking steps in preparation for their introduction.

HUNTING AND TRAPPING.

The Siamese, chiefly on account of the Buddhist law, which forbids the taking of life, is rarely a keen follower of the chase and hardly ever resorts to hunting or trapping as a sole means of livelihood. It is one thing, and quite bad enough some say, to take fish which, though certainly living creatures, are cold-blooded and of a rudimentary intelligence and, after all, are not usually killed but are merely removed from the water! It is quite another matter to shoot, stab or club to death, warm-blooded and breathing creatures which fly in evident terror before the huntsman, employ an instinct which is very near intelligence in trying to elude him and, dying, look upon their slayer with frightened, reproachful eyes that cause him disquieting qualms. It is not difficult to understand how the indulgence extended by public opinion to a fisherman is withheld from a hunter, more especially when it is borne in mind that the public must and will have fish but can usually manage without game. However, there are breakers of

commandments among the followers of every faith, and a few Siamese are sportsmen, while here and there a man is found who makes a living by killing and trapping wild animals. Beasts of prey are trapped and shot in self-defence and deer are hunted, more especially when the rising waters cut them off in the plains from their jungle retreats and render them comparatively easy victims to the hunters. Among the lesser animals, the hare, in spite of a reputation for superior intelligence and cunning supported by many popular legends of the "Brer Rabbit" type in which he figures as hero, is specially singled out for the diversion of sportsmen. In the scrub jungle surrounding villages, where he loves to linger, low hedges are made, sometimes of great length, converging by devious ways towards a small enclosure. The youths of the villages, armed with clubs, beat the jungle from a distance towards this maze, and the hares, having been driven within it, course along beside the hedges until the small enclosure is reached, when, with a wild shout, two or three men in ambush leap out behind them, hurry them into the enclosure and there dispatch them with sticks.

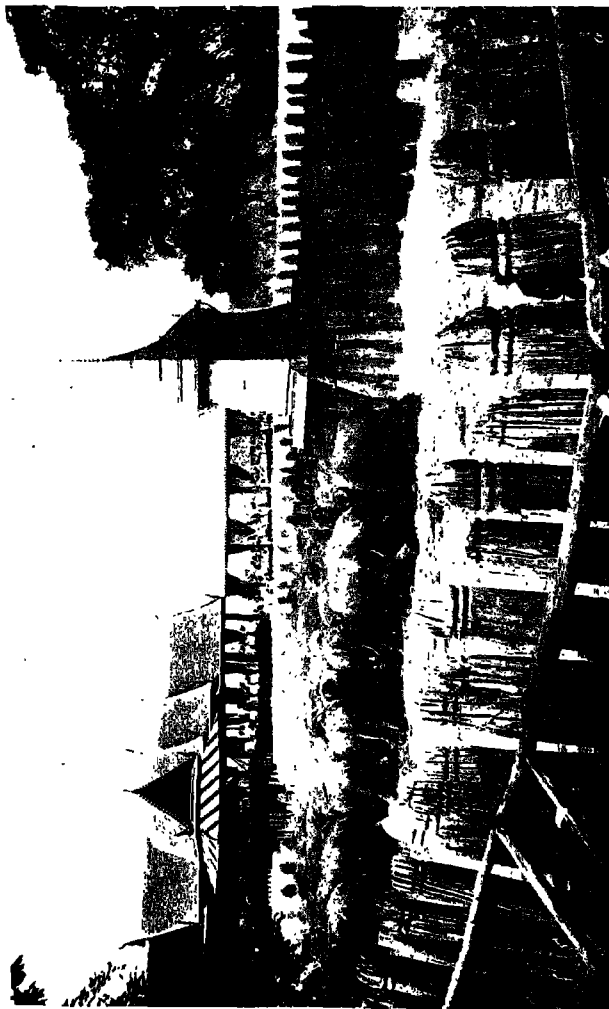
Wild elephants are numerous in Siam, both in the mountains and on the plains. While all are considered the special property of the king, only those which inhabit the plains are preserved, the others being left at the disposal of the hillmen or any other sportsmen who may care to pursue them. The elephants of the plains can scarcely be considered as wild, for a large Government Department has them, as well as the royal domesticated animals, under its particular care. The herds, of which there are several comprising some 300 individuals, are allowed to wander at will but are kept constantly under supervision and can at any time be rounded up for inspection by the officers of the Department. The people are forbidden under pain of severe punishment to drive or in any

way molest the animals, even when their crops are threatened by them. Indeed it happens every year that the herds invade the fields of young rice in some neighbourhood or other, destroying large areas of crop which the owners are not allowed to protect and for which they usually fail to obtain any compensation.

Outside the modern city of Ayuthia and on the ground of many a historic fight of the old wars with Burma, there stands a great square enclosure of huge teak logs and massive walls, the latter surmounted by a royal pavilion, and here are held the periodical elephant catchings which have furnished copy for many a European magazine article. These diversions are regarded in Siam, not merely nominally but actually, as sport of kings, and most peripatetic scions of foreign royalty who have visited the country have witnessed the taking of elephants from the pavilion on the keddah walls in company with the Siamese Monarch. On such occasions Ayuthia wears a holiday aspect. Its numerous canals are thronged with boats of every description, many thousands of people coming from Bangkok by river to see the sport and enjoy a picnic on the water. Excursion trains run during the three days of the catching, bringing crowds of holiday-makers for whose convenience steam-launches ply between the railway station and the keddah. The keddah itself flutters with bunting, and a troop of servants prepare the pavilion to receive the royal sportsmen. Soldiers are on duty at various points and the blue-uniformed myrmidons of the Elephant Department are everywhere. The king arrives escorting his royal guest and followed by Court officials and members of the royal family, and passes, smiling, through the gaily-dressed crowd, drawn respectfully aside, to his seat in the pavilion. Meanwhile and for many days before, the elephants have been slowly driven up from their



ELPHANT CATCHING IN THE KEDDAH
District, 1911. (From the collection of the British Museum)



WILD ELEPHANTS IN THE "KEDDAH," AYUTTHIA.

distant feeding-grounds and are now out on the plain before the keddah, shepherded by attendants mounted on large and well-trained tuskers. At a word from His Majesty, orders are passed and the herd moves forward and enters the V-shaped palisade which converges towards the entrance of the keddah, a narrow opening through which only one animal can pass at a time. Driven on from behind into the ever diminishing space, the huge beasts, of which there may be some 150 present, now begin to crush and push against each other and a deafening uproar ensues, continuing unabated for hours until, with titanic heavings and strugglings, the whole herd has passed through the narrow entrance and has arrived, furious from spear-pricks of attendants and hustlings by the tame animals, and trembling with outraged dignity, in the interior of the keddah.

On the second day the catchers enter the enclosure, seated upon tuskers of proved reliability and, having selected from the herd the dozen or so of young males which it is desired to capture, proceed to the difficult task of passing a noose of strong rattan cable over the hind feet of these. This is done by driving and following the herd round and round the interior of the keddah with the noose held ever ready on the end of a long pole, forcing the docile tusker close up to the selected animal and, while the latter lifts his feet in walking, slipping the loop over one of them and as far up the leg as possible. The tusker then turns tail and retreats, paying out slack cable the end of which is seized by assistants who dash into the arena and make it fast to one of the palisades. Meanwhile, the noosed animal walks round with the herd until, the cable running taut, he is brought up standing, and, with a roar of rage and fear, begins a long and fruitless struggle against the fate which has overtaken him. The captives having been made, a small exit is opened in the keddah wall opposite to

the entrance and the remainder of the herd is driven out into the open, where it is received by the shepherd tuskers. The prisoners are then taken in tow, not without furious resistance and desperate attacks upon their captors, and are hustled and shouldered, amid derisive cheers from the thousands of spectators massed upon the wall, out of the enclosure and away to the stables, the scene of their future education.

The third day of the catching is entirely devoted to frivolities. The herd, now thoroughly exasperated by unmannerly hustling and by constant proddings with spears at the hands of the riders of the shepherd males, and containing more than one female rendered desperate by the loss of her offspring, is marshalled in the open ground outside the keddah and separated from the crowd only by the tame tuskers. Anon a young man, gaily dressed, carrying an umbrella and smoking a cigar, will slip between the docile guardians and stroll, an object of admiration to the whole vast assembly, across the open towards the angry herd. The elephants shrink back, all heads turned towards the intruder and all ears outspread. Suddenly with a bellow an old cow rushes out, tail and trunk erect and ears spread wide, and makes for the pedestrian. He, intrepid fellow, waits till she is towering close above him, then with a flirt of his parasol in her face, darts back between the tuskers who receive the baffled female on their foreheads and drive her back to the herd. This performance is repeated again and again with such variations as the human performers, stimulated by the presence of royalty and by a thirst for glory, can devise. Sooner or later one of the elephants eludes the tame tuskers and appears suddenly, furious and trumpeting, amongst the crowd. In the general stampede which ensues, the great beast appears bewildered and, unable to select a victim for its wrath, usually stands stock-still until all have reached points of safety. Sometimes, however, excessive foolhardiness

or a false step and a fall, fixes the attention of the elephant upon one individual who is overtaken and, with a sweep of the trunk or a side kick, is knocked out of existence in a trice. Unless one or more of such gruesome incidents occur, the day's enjoyment, in the popular estimation, is incomplete. With the close of the third day the crowds disperse by railway and river, and the morrow's dawn finds the keddah deserted and the herd of wild elephants already far on its way across the plain back to the feeding-grounds.

A good many years have passed since the last elephant catching took place, and it is rumoured that, the elephant being now considered out of date as a royal appanage, no more will be taken and that the herds will be banished for ever from the plains where, moreover, agriculture is extending so rapidly that there will soon be no room for them.

Once upon a time the destruction of crocodiles was a recognised business in Siam, and Pallegoix records how, so late as 1852, many persons practised the art of taking them alive, apparently for profit as well as for amusement's sake. Now, however, the crocodile is rare in Siamese waters near the haunts of men, and doubtless it will soon be altogether extinct except in the marshes of the far interior. Occasionally, however, one is reported in the environs of Bangkok and steps are at once taken to secure it. The services of a witch-doctor are secured, and a large party, anticipating a day's entertainment, accompanies him in boats to the haunt of the animal.

Arriving at the spot the witch-doctor begins operations by burning joss sticks and repeating incantations appropriate to the occasion. Finally he fastens a live monkey securely to a plank, cuts off its hands, and sets it afloat. Either the power of the incantations, the cries of the cruelly-mutilated animal, or the blood with which the water is at once discoloured, acts so strongly upon the crocodile that, in spite of the number

of boats full of noisy, excited spectators, he almost invariably comes to the surface, when he is instantly secured with rope nooses and carried off in triumph.

It is chiefly amongst the non-Buddhist tribesmen of the highlands that the true hunting spirit is to be found. In the mountainous jungles, game of all kinds is abundant, and man, unhampered by religious scruples and spurred on by hunger, wages against it a continual war of trap, knife, and missile. Even the elephant, wilder and fiercer here than are his brothers of the plain, goes down before the savage hunters of the hills, for the diminutive Semang shoots him in the foot with a tiny poisoned arrow, the wily Karien hamstringing him from behind a bush, and the Kamuk riddles him with balls from an old Tower musket. The majestic bison and the rhinoceros also fall victims to the hillman's guile, while pig, deer and other animals are beaten out of the jungle and shot in the most approved style. With the hillman, trapping is a fine art. All kinds of wild animals as well as many of the larger birds are caught with pitfalls, nooses, cage-traps, springes and other contrivances. Most are killed in the trap, but now and then a tiger, Malayan tapir, sambar, Schomburgk's deer or barking deer, is taken alive and sold in the plains, while peafowl, pheasants and many other birds are frequently kept in captivity.

To the European hunter of game, Siam is practically a sealed book. A few tiger, rhino and bison and, more often, various kinds of deer, have been bagged by Forest Officers and others whose calling takes them into the wilds, but, though game is plentiful, the best districts are difficult to reach, while the dense jungle and a total absence of *khobar* are obstacles difficult to surmount, so that the white sportsman rarely ventures beyond the snipe-grounds round about Bangkok, where enormous bags are secured by week-end shooting parties.

FORESTRY.

Mention has more than once been made of the dense vegetation which clothes all the mountains and many of the valleys and plains of Siam, and, in the notes upon the Flora of the country, the numerous orders of plants which are represented in different localities by forest trees, often of great size and much commercial value, have been enumerated.

It may not, however, have been made sufficiently clear how great is the area under forest of one kind or another in proportion to the cultivated, or otherwise open, part of the country; how, in fact, more than three-quarters of the total area is practically uninhabited land in which wild nature works untrammelled and of which, though teeming with her spontaneous products, the greater part is, under present circumstances, practically without profit or advantage to the State. In Central Siam, it is true, the forest area is small compared with that of the open and cultivable land, but in the other three main divisions of the country the presence of mankind is marked by little more than mere patches and narrow belts of cleared land along the banks of streams and in other favourable spots, at the edges of which the natural forces stand arrayed, prepared to obliterate such traces, as they have often done before, whenever human effort may be relaxed.

The forests of Siam, which in most respects closely resemble those of Burma, may be considered in two main divisions, namely, 'Evergreen' and 'Deciduous' forests, each of which may be further divided into three distinct classes or types, these coming under 'Evergreen' forests being, (1)^a Littoral forests, (2) Tropical Evergreen forests, (3) Semi-temperate Evergreen forests; while the division 'Deciduous' forests includes (1) Laterite forests, (2) Dry mixed forests and (3) Teak forests.

Littoral Forests are confined to a small area in Siam, being present only at such spots on or near the seashore where the land is low-lying, formed of mud and covered with salt-water swamps. The more extensive of them are situated round about the mouth of the Menam Chao Phaya river and along the northern shore of the Gulf of Siam; also in parts of the Chantabun and Puket Circles. They are composed almost entirely of arboreal species of the order *rhizophoraceae*, some thirty or more species, collectively known as mangrove, being present. Most of them attain to considerable size and, with closely interlacing roots and branches, form the most impenetrable of jungles. Although these forests are practically uninhabitable on account of the vast numbers of mosquitoes which infest them, and although they produce no timber of any durability, yet they are not without economic value, for their wood is peculiarly adapted for use as fuel. In former times the littoral forests along the northern shore of the Gulf, in places some ten miles wide and in total area about 100 square miles, have been regarded as common lands to which any person might resort to cut fuel for private use or for sale, subject only to an octroi duty on conveying the same up the river to Bangkok. Of late years, however, money has been invested by individuals in cutting waterways through the dense jungle, whereby inner regions have been made accessible, and prescriptive rights have grown up which the Government appears inclined to recognise by the issue of permanent title deeds, though it is probable that in so doing the State is abandoning what might, with conservation, be made a prolific source of revenue.

The species which provide the best fuel are those known in Siamese as *mai kongkang*, *mai samè*, *mai kabun*, and *mai lam*. These are all of rapid growth, in seven years attaining a girth of over

20 inches, but, in consequence of the increasing demand for firewood in Bangkok, few trees in the accessible parts are allowed to reach that size, and were it not for the extraordinary vitality of the plants, the roots of which send forth fresh shoots as soon as the tree is felled, it is probable that the forests would long ago have been quite worked out.

The bark of several species of the trees which grow in mangrove swamps yields the valuable tanning substance known in commerce as catechu or cutch, and at various places on the island of Borneo this is extracted at a considerable profit, the value of the timber as fuel being in no way impaired thereby. In Siam, however, this property of the bark of the *rhizophoraceae* does not appear to be known and the whole of the bark of the trees felled for fuel is wasted. Both in America and in Europe the supply of oak and hemlock bark for tanning is constantly diminishing, and it would therefore seem to be worth the while of the Siamese Government to encourage experiments in the cutch-producing capacities of its littoral forests.

Wherever the sea beach assumes anything of a slope, and mud gives place to sand, the mangrove disappears and is replaced by the graceful casuarina tree, for which, however, no use other than that of ornament has yet been found.

Tropical Evergreen Forests consist of two broad belts, the one passing up from Chantabun along the ranges which separate Central from Eastern Siam, and the other from the most southerly point of Southern Siam up through the whole of that part and along the frontier districts in the west of Central and Northern Siam. The eastern belt touches the coast in the south and follows the line of mountains thence to its other extremity on the Mehkông river, its width varying from four or five to nearly one hundred miles. The western belt clothes the mountains, as also by far the greater part of the valleys and plains, of

Southern Siam, informs the wild scenery of the upper Mehkông river valleys, is conterminous with the evergreen forests of the Tenasserim Division in Burma and merges at last into the semi-tropical evergreen forests of the far north of Siam. These forests abound with timber trees of many species, the potential value of which is almost incalculable, but which, in the absence of means of extraction, are actually worth little or nothing. Let the traveller ascend a hill near Chantabun or at Kabin, or anywhere in the Patani, Chum-porn, or Nakon Sawan divisions, and scenes of almost exact similarity unroll themselves before him; mile upon mile of dense green forest unbroken save for occasional patches of rice-fields, spreading across plains and up the sides of mountains; forests where the gigantic *dipterocarpus turbinatus* (mai yang) and *hopea odorata* (mai takien) stand up conspicuous with their canopies of dense and vivid foliage; where rosewood,* boxwood,† ebony,‡ and brazilwood or sapan§ are massed together with trees of a hundred other species all interlaced by rattan canes or perhaps by huge guttapercha-yielding climbers. Beneath these masses of foliage is a rampant undergrowth of shrubs, bamboos, cane-brake and smaller plants of which those belonging to the Ginger family *Zingiberaceae* are, perhaps, most common, and here the rhinoceros, the bison and the strange Malayan tapir may be met with, monkeys of many kinds may be seen gambolling in the trees, and the giant hornbill may be heard winging noisily overhead.

The human inhabitants of these forests are few and are almost entirely persons engaged in the collection of wood-oil, canes, bamboos and other minor forest produce, and in the felling of timber, of which the more valuable kinds are extracted to some trifling extent.

* Mai pa yung.

† Mai put.

‡ Mai dam.

§ Mai fang.

The various species of trees which compose the forests are not mingled in the same proportion throughout; thus in the Peninsular regions *lagerstroemia tomentosa* (*mai intanin*) and another tree called in Siamese *mai kiam*, both excellent hardwood trees, preponderate, while in the tropical evergreen forests of the eastern districts, *mai takien* and *mai yang* are more especially abundant. Again, in the western forests of Central Siam *xylia xylocarpa*, known as *mai deng* or 'Red wood' in Siamese, is the principal timber tree, while this is also the favourite locality of the sapan and boxwood.

Hitherto, practically nothing has been done in the direction of conservation in these forests, with which, in fact, the Royal Forest Department has only very recently begun to concern itself at all. But their great value as a national asset is at length being realised, and also the fact that immense damage has been done in the past owing to the absence of measures for conservancy. Two European firms have for some years been extracting timber in Southern Siam under concessionary rights, and the Government has decided that the time has come when this fine property can be neglected no longer but must be taken up and administered even as the teak forests have been. The world's supply of timber is said to be in danger of running short, and it has recently been prophesied that about eighty years will see the practical exhaustion of soft woods of the kinds at present in use. Long before then the world will have discovered that the evergreen forests of Siam contain many species of soft wood trees, and as the timber trader finds the woods of his own lands becoming insufficient to supply his wants, he will most assuredly turn his attention to other and more distant sources of supply, amongst which Siam will take a prominent place.

Semi-temperate Evergreen Forests occur at a high elevation on the mountains of Northern Siam and

consist of a mingling of the trees of the temperate zone with those peculiar to the tropics. Here are found bamboos and palms of numerous species interspersed among groves of pine, oak and chestnut. These last are of many species and, though closely related to the European varieties, are all evergreens. Such forests are comparatively free from undergrowth and often have a park-like appearance very pleasing to the view. The trees do not as a rule attain to the size of the monsters of the tropical forests and have not hitherto been made use of to any extent as timber. A certain quantity of resin is extracted from the pine trees for the making of torches and the concoction of a rough native medicine for healing wounds, and a few logs of ornamental or scented woods, which command a high price, are occasionally extracted for sale. Otherwise the forests of this category are without recognised value.

Laterite Forest is the name given to the jungles containing trees peculiar to the lateritic soils which cover the greater part of Eastern Siam and occur in belts and patches elsewhere, except in Southern Siam. The vernacular name for such forests is *pa mai teng rang*, derived from the trees *shorea obtusa* (*mai teng*) and *pentacme siamensis* (*mai rang*) which, together with *dipterocarpus tuberculatus* (*mai pluang*) predominate therein. These forests are thin and contain a great deal of open space and, being deciduous, wear during the months of the hot season a dry and scorched appearance. Both *mai teng* and *mai lang* are of some value as timber and are extracted for local use and for sale. In the absence of all control the trees have been recklessly felled and now are seldom found of anything but insignificant size except in places where there is no population anywhere near. The undergrowth consists chiefly of grass which becomes completely dry during the hot weather and causes forest fires of wide extent, seriously interfering with



TAITORAL FOREST (PA M H SIV LAY) WITH SUCAL TOAL ROCK FORMATION
S. SIAM WEST COAST



TAI KHE FOREST (PA M H HUNG KING)

Phot. M. Ch.

been worked and used locally from time immemorial. About the year 1882, the attention of foreigners, chiefly that of the British who were already working teak in Burma, was attracted to the forests of Siam and an export trade in teak arose which, after the annexation of Upper Burma by England and the consequent controlling of the teak trade there, assumed large proportions. At the same time the price of the article increased rapidly, whereby the trade acquired additional impetus, and soon the forests were being attacked in all directions and subjected to indiscriminate girdling and felling. At that time the forests were regarded as the property of the Hereditary Lao Chiefs who ruled in different parts of Northern Siam, and these persons, entirely disregarding the necessity for conserving the teak against extinction, sold and gave away forest rights in a manner, which if allowed to continue, must have ended by exhausting them and thus depriving Northern Siam of the principal source of its revenues. At this juncture the Siamese Government stepped in and took over the forests, assuming entire control and compensating the chiefs in money for the loss of their rights. The terms and conditions of the leases made by the Lao Chiefs were intolerable to the Forest Department which was now instituted, and negotiations were soon opened with the lessees, which resulted, in 1897, in a considerable curtailment of their liberties. Girdling was restricted from this time on, and in 1909 when the old leases expired and, after an immense deal of discussion, had been partially renewed, this operation was altogether forbidden and the energies of the timber companies were confined to felling the trees already girdled, and to extracting logs felled in former years.

Girdling, or the cutting of a deep ring round the tree near the base, the preliminary operation in the business of teak extracting, is performed two years

before the trees are felled, during which time they die and become seasoned, and this operation had been carried on to such an extent under the old conditions that, after it had been entirely stopped, the number of logs annually extracted from the forests continued unabated for many years. Later, however, owing to the working out of the old timber and to the issue of leases over new areas, girdling was resumed, but was now performed by the Forest Department to secure the proper observance of lease conditions as to size and situation of trees, and leases were restricted to the extraction of timber so girdled. Under the new arrangement lessees are permitted to operate in one half only of the area leased, the other half being kept over until the first shall have been worked out.

What with the curtailment of leases, the inspection of workings and the checking of girdling and illegal felling of trees by persons not authorised to extract timber at all, the Forest Department undoubtedly saved the teak industry of Siam. But it did more than that, for that same industry was presently made to yield a large revenue and the working of the forests was so arranged that the annual income to the State from this source has been steady for many years and will probably continue so for the future.

Apart from the workings of the regular forest lessees, a certain quantity of teak is extracted by parties contracting with the Government which either buys the timber from the contractor at a fixed rate after it has been got out, or divides it into two equal portions, one of which accrues to either party to the contract. Government timber thus obtained is sold at different trade centres on the river, but, as the system of contracts demands the services of a considerable staff, less is done in this way than might, and should, be the case.

The most important lessees of the teak forests are six European firms, of which four are British, one French and one Danish. The capital invested in the

industry by these corporations is not far short of three millions sterling, and a strong force of employees is maintained by each of them. In all there are some fifty or sixty Europeans at work in the forests and the number of Asiatics amounts to several hundreds. The lumbermen are chiefly of the Kamuk tribe, amongst whom this form of labour has now become traditional. Many elephants are used for hauling, and consequently an elephant is valuable property in Northern Siam, one such animal representing an assured income to its owner. Elephant stealing is a common form of crime and at times is so frequent as seriously to hamper the operations of the forest lessees.

In former days the energies of the lessees were chiefly confined to those forests which were situated near to the rivers and, while these were worked out as completely as possible, the tracts which, owing to difficulties of transport, promised less profits, were left practically untouched. The restrictions now imposed by the Government have, however, caused attention to be diverted to the more distant parts, and to the contrivance of means whereby the cost of extraction may be reduced. The result is that with hauling machinery, rails and other substitutes for elephants, several localities have recently been taken up which a few years ago were not considered worth working.

Two years, or rather more, after a teak tree has been girdled and thereby killed, it has (as already said) become sufficiently dry and seasoned to be extracted from the forest. It is then felled, trimmed into logs, hauled to the nearest watercourse, probably dry or nearly so at the time, and there left until the ensuing rains shall fill the stream and float it out. In May or June the waters rise and the logs come down, assisted by the foresters through the places where a jam might occur, until they reach the larger and more open rivers. So long as rapids are to be encountered

HAU TO CUNG PREPARING FOR THE FLOWING SEASON





TIAR LOGGING IN SIAM
HAULING BY MECHANICAL POWER ON RAILS

the logs are floated singly, but when these have been passed they are fastened together into rafts of from one to two hundred logs, in which form they make the long journey down to the mills at Bangkok. At various points on the river just above the capital the rafts are tied up until required at the mills, and at these stations, notably that in the bend of the river at Pakret, from five to ten thousand logs are often to be seen at one time. The period which elapses between the felling of a teak tree and its arrival at the mills is usually between three and four years.

A comparatively recent Decree has defined the purposes for which teak timber may be granted free of all charge. These are, for the building of public rest-houses, for bridges constructed by private enterprise as charitable works and for religious edifices of all kinds. The amount of timber annually requisitioned for these purposes is suprisingly large, and considering that teak is one of the most durable of timbers, resisting for many years the ravages of climate and insects, wherefore buildings constructed with it do not require to be replaced or even repaired for a very long time, the real destination of all the free-granted timber remains something of a mystery.

Siamese forestry apart from teak is still a minor industry. The two European firms engaged in the extraction of *mai takien*, *mai tabek* and other timber from forests in Southern Siam, both do a fair amount of business, running their own sawmills and employing each some hundreds of hands in the forests. They do considerable business in railway sleepers, many thousands of which they have supplied to the Indian as well as the Siamese railways.

Not long ago the only timber that a self-respecting Siamese would use in house-building was teak, and all other woods were classed under the generic term *mai Singapore* or 'Singapore timber,' for most timber other than teak was at that time imported by sea

from the Straits Settlements and was indeed very inferior stuff. Now, however, that the Siamese have realised that many of the woods other than teak make very good timber, their use as building material is becoming quite usual.

Rosewood, ebony, sapan, and box are, as has been said above, extracted in small quantities from the forests where they most abound, and the collection of various oils, resins, gums and juices provides spasmodic employment for a small percentage of the population. The cutting of rattan canes is a recognised business in some districts, while the demand for bamboos for temporary buildings, fishing stakes and all sorts of domestic uses is always brisk and employs numerous woodsmen and rafters.

MINES AND MINING.

Gold. The tale of gold-mining in Siam is interesting and romantic. It is a peculiarity of gold that, beyond all other minerals, the mere report of its presence is apt to fire the imagination not only of the professional miner but of the ignorant layman, and to this quality is due the fact that such reports, backed by the exhibition of specimens of the metal itself, have led all sorts and conditions of men in Siam to the indulgence of dreams of wealth, the realisation of which has been sought in ways not always free from guile. The wide, though very thin, dissemination of gold throughout the country has naturally been the cause of continual rumours of the possible existence of hidden wealth, first in one and then in another unexplored quarter, with the result that at one time it was rather the rule than the exception for Europeans connected with the country, as well as for most Siamese of standing, to hold or be interested in some gold-mining concession or other. The majority of these persons spent their money in prospecting and developing their property,



PEAK LOGGING - THOUSANDS USING A HAM

(Siam II p 70)

FIGURE 1. INDIAN RESERVATION



invariably met with complete disappointment and, having burnt their fingers, returned to less inspiring but more profitable avocations ; but a more astute minority, passing on, not without further embroidery, the tales which had first caught their fancy, entangled the public in the matter and, with the heavy money of excited speculators in their pockets, stood aside and awaited the issue with calm, such issue usually taking the form of a total collapse of the proposition. Thus came into existence the Wattana, the Kabin, the Lomsak, the Bangtapan, the Tomoh and many other gold-mining companies, each of which, after an opening flourish and the expenditure of much capital, drooped and declined through various stages of liquidation and reconstruction to ultimate extinction. Places, the names of which once were heard upon the Paris Bourse and the London Stock Exchange, are now again forgotten wilds of jungle, where decayed and weed-covered machinery, transported there from far distant countries at vast expense, alone recalls the hopes that once centred round them.

Meanwhile in happy ignorance of such transactions, the humble villager derives amusement and a little profit from gold-washing in the mountain streams. At the end of the rainy season and after the rice harvest has been got in, gold-washing parties are organised which, partaking of the nature of a picnic, are made the occasions of much frolic and not a little flirtation as understood in the wilds of Further India. The implement used is a shallow pan of wood, some twenty inches in diameter and about six inches deep in the middle. Each operator stands in the water of the stream and fills his pan, with gravel and sand scooped from the bed with a coarse basket-sieve. The pan is then gently rotated, the rim being dipped so as alternately to take up and expel water, by which means the lighter constituents of the gravel are got rid of. The remaining material is then carefully set aside

after having been examined and any visible gold removed. Later on these results of the washing are treated with mercury, whereby any gold retained therein is extracted. The average winnings for a day of this work may amount to about sixpence worth of gold for each person. Here and there, however, gold washing is a more serious occupation. Many of the riverbeds and alluvial flats of Southern, and a few streams in Northern, Siam contain gold in fairly considerable quantities and, as at Bangtapon, Tomoh and Lomsak, have been worked with some attempt at system for a very long time. Remains of ancient workings which were evidently on an extensive scale, are to be seen in several localities, and in the neighbourhood of these there are small communities whose principal means of subsistence is gold-washing.

Tin. By far the most important mining industry of Siam is the extraction of tinstone from the alluvial deposits and the lodes which extend northwards from the great tin fields of British Malaya far up into Southern Siam. The Siamese, however, averse from all forms of labour other than agricultural, take little part in the industry which is, or was until the recent appearance of European enterprise, almost entirely in the hands of Chinese. The Chinese in fact, drawn thither by the mines, early established colonies throughout the tin-bearing provinces, and now form no inconsiderable part of the population of those parts. Many large fortunes were made by individuals amongst the settlers and, in one instance at least, a family was founded, the scions of which, having in troublous times acquired control of an entire province, achieved a position of practically independent sovereignty and presented the curious spectacle of Chinese Chiefs, or Rajas, ruling over a mixed population of Siamese and Malays. Until comparatively recently, the kings of Siam exercised little more than a nominal control over the tin-producing provinces, and though the mines

were tolerated because of the revenues which they contributed to the Bangkok Treasury, small assistance was given, either in their development or in the preservation of law and order in the districts where they existed. Consequently, while the tin-bearing areas in the British-protected Malay States were being actively developed and were arousing a world-wide interest, those of Siam attracted little or no attention and were left in unchallenged possession of the Chinese miners, who continued to work them by the primitive methods of their forefathers. Some thirty years ago, however, the Government turned its attention seriously to the problem of administering these distant but wealthy provinces, and with the establishment of a branch office of the Mining Department at Puket and the inauguration of a scheme of public works, the prospects of tin-mining began to improve. Active prospecting work was undertaken, which revealed the presence of enormous supplies of ore hitherto quite unknown. European mining men were attracted to the neighbourhood and, under the terms of the Mining Act, several new mines were opened in accordance with up-to-date methods and with modern machinery. Early in the present century a proposal to dredge for tin beneath the waters of the extensive natural harbour at Tongkah, the chief town of the island of Thalang, was sanctioned and successfully undertaken by an Australian company, and this was followed by several other dredging propositions by which the total tin output of the country was much increased. The industry, which in 1895 was stationary or slightly declining, is now steadily progressing, and the annual output, then some 3,600 tons, had grown by 1922 to over 6,000 tons. This, however, is but the beginning of the development. Quantities of known ore remain still untouched, while vast stretches of country have never yet been prospected, and there can scarcely be a doubt but that in a few years' time the production of

Siamese tin will be greater than it has ever been hitherto.

Apart from the lode-mining, dredging and hydraulic-ing which have been undertaken by European companies the old Chinese system of mining by open-cast workings, more like quarrying than mining, prevails. At many points in the Western Provinces, the remains of very ancient shaft-mines exist, but these are supposed to be vestiges of pre-Chinese colonists from India, and the only modern shaft workings controlled by Asiatics are those of a few Macao Chinese who have learnt the method in Australia. The alluvial mines, locally called *mueng sa*, are of all sizes, some of the workings being mere pits while others are great trenches thirty or forty feet deep, many yards wide, as much as 500 yards long and employing a thousand men. The depth of the mine depends upon the thickness of the overburden which has to be removed before the tin-bearing stratum or '*Karang*' is reached. This, when laid bare, is simply shovelled into baskets by the miners and carried up long inclined plank-ways to the sluices. Puddling machinery is being gradually introduced, but the usual method is to heave the '*Karang*' straight into sluices a hundred yards long where, as it is carried down by a stream of water, it is subjected to a continuous raking, the heavy tinstone remaining behind and the mud and sand passing on and out on to the tailings.

A large proportion of tin ore is not, however, alluvial at all but is found on the hill-sides in the more or less decomposed granite. This is worked by the process known as *mueng slaan*, which consists in laying bare the tin-carrying rock by open-cast working and then causing water to flow over it, carrying it down and through a series of sluices arranged below. Considerable ingenuity is displayed in conveying the water supply to the top of the cuttings ; water courses are carried from great distances round the shoulders of the hills,

through projecting spurs and over deep gullies, the last by means of fragile-looking wooden aqueducts, supported on a maze of bamboo scaffolding, sometimes more than seventy feet high. As the water pours over the face of the cutting the miners loosen the rocks with iron pikes and assist the stream in carrying it down.

In some cases the dressed ore is smelted on the spot or at the nearest village, in small earthen blast-furnaces bound round with iron, whence the tin is run off into pigs of about 90 lbs. weight, in which condition it is exported. The fuel used is charcoal, the preparation of which from wood felled in the surrounding jungle itself forms an industry and one that, for want of supervision, has denuded the forests of much valuable timber. Of late years two big tin-smelting firms of the Straits Settlements have established ore-buying agencies in Siam and have caused a considerable reduction in the number of local smelting furnaces. Indeed it may be predicted that, what with increasing fuel difficulties, and with the trading facilities offered by these firms, the smelting of tin in Siam will shortly be altogether a thing of the past.

The value of the annual tin production, calculated at the average price for the ten years 1910-20 is about a million and a quarter sterling. The Government revenue is secured by an *ad valorem* royalty fixed from time to time according to a sliding scale based upon the market price of the commodity, the minimum being ten, and the maximum twenty-five, per cent.

Gems. The gems of the Chantabun district have been known for many centuries. De La Loubère, writing in 1714 A.D., mentions sapphires as one of the products of Siam and adds that the stones usually found their way into the possession of the monks who were very secretive as to whence they were obtained, and employed them as charms, their value as jewels

not being fully appreciated in the absence of persons able to cut and polish them. It is recorded in Finlayson's Journal and by Crawford, that in the early part of the nineteenth century the gem mines were being worked in a small way and as a royal monopoly but that the stones obtained were of a poor quality. Some time about the middle of last century the mines became known to certain Shan and Burmese traders who visited the locality and, with experience gained in the gem mines of Burma, soon demonstrated that the Chantabun gravels were a good deal more valuable than had hitherto been supposed. Rubies and sapphires which they procured there found their way to Burma and attracted many experienced miners to the spot. The spirit of gambling which has always pervaded the Ruby Mines of Burma spread to Chantabun, and Burmese and Shan speculators leased the mines from the Government and brought over their own men to work them. One after another they failed, however, until, in 1880, a financial genius arose amongst them who, gathering all the mines into his hands and gaining control of the opium, gambling and other monopolies of the district, conducted business at a profit for many years. This person induced some thousands of his fellow countrymen to join him, and a considerable colony grew up, where the customs and ways of life peculiar to the Shans were reproduced in every detail, and where he ruled in almost complete independence for many years. His prosperity increased and the fame of the gems from his mines spread not only through Siam and Burma but to Calcutta and even to Europe. In 1895, however, the Government made a concession of the whole district to a British company, after which the Shan magnate, shorn of many of his privileges, fell into embarrassed circumstances, the output of the mines declined, and the population began to decrease. Finally by the last 'rectification' of the Franco-

Siamese frontier, the whole of the Pailin district, which contains most of the really valuable Chantabun gem mines, was rectified out of Siamese and into French control.

But Chantabun remains a gem market. In spite of political vagaries, the greater part of the Pailin gems still find their way there, and meanwhile, the experts who have for years made that town their headquarters are busy prospecting the gem-bearing gravels which remain on the Siamese side of the new frontier, and that not altogether without success.

In the Ratburi (Rajaburi) Circle near the ancient town of Kanburi, a basaltic formation of gem-bearing promise was discovered about the year 1918, and applications were made to the Department of Mines for permission to mine there. Though it is reported that good sapphires have been found, an examination of the locality by the Department of Mines has revealed only corundum and stones of a poor quality the sole value of which lies in the indication that they give of the possibility of better things.

The working of the gem-bearing gravels discovered in 1890 at Chieng Kong in Northern Siam, proved disappointing and was given up many years ago, but recent increase in the value of sapphires and rubies is re-awakening the interest of Shan prospectors in those distant fields.

The best working time for gem miners is during the rains when water is available everywhere with which to work the gravel. Unfortunately the rainy season is also the fever season and the mortality amongst the miners is therefore always high. The methods by which gem-mining is conducted do not vary and consist simply of digging a pit in a likely place, a few feet wide and deep enough for the exploration of all the gravel within reach. The success of the business is almost entirely a matter of blind chance. A pit may produce a single stone worth a small fortune or it may

yield no return at all. When a fine gem has been found, a rush for the land immediately surrounding the spot takes place, and sites in the neighbourhood of the lucky pit are traded or auctioned, sometimes many times over, before any attempt is made to work them.

The above noted gold, tin and gem workings constitute the only mining enterprise of any importance in Siam. Silver, iron, lead, copper and coal have been referred to in Part I. (Geology and Minerals), as existing in different parts of the country and as having at one time and another, been mined with more or less, usually less, success, but operations with regard to those minerals are at the present time so minute as to call for no special mention here.

RICE-MILLING.

The only Siamese industry which can be called a manufacture, is rice-milling. The first steam rice-mill on the banks of the Menam Chao Phaya was built at Bangkok in 1855, and the original engines, though long ago replaced by more modern machinery, were carefully preserved by the Chinese owners, as the 'Good Joss' which brought fortune to the family, until they were destroyed by fire in 1918. The number of mills now running is over sixty and more are continually being built. The industry has within recent years extended to the provincial towns, and mills have been opened at Tanyaburi, Petriu, Tachin, Lakon (Nakon Sri Tammarat), Sôngkla and Ayuthia. The owners of the mills are of Siamese and of various other nationality, Chinese largely predominating; the employees are Chinese with, in most of the larger mills, European engineers in general charge of the technical work. Every mill is built on the edge of a river or canal and has a wharf to which the paddy is brought in boats to be milled. When competition is keen in Bangkok, the mills send out buyers far up all the

waterways to intercept and bargain with the owners of the paddy boats before they reach the town.

The business of transporting the grain from the fields to the mills has never been seriously undertaken, either by the millers or the farmers, and there has consequently grown up an army of middlemen who buy from the latter and sell to the former, an occupation that calls for a good deal of hard work, vigilance and business acumen and is therefore entirely in the hands of Chinese. The improvidence and chronic impecuniosity of the peasant often compel him to sell his crop as soon as it has been reaped, if not sooner, regardless of the state of the market, and in such cases the middleman usually manages to buy at prices which leave him a big margin of profit. Then, on arriving with the paddy in Bangkok, he sets to work to force the mill price up and, if foreign orders for rice happen to be brisk, succeeds as a rule in doing so. Thus it is no unusual thing for the best part of the profit on the growing and milling of a season's rice to go neither to the farmer nor to the miller, but to the individual who carries the grain from the one to the other, which, as the middleman pays few taxes and transmits nearly all his earnings to his home in China, is not a very happy arrangement from the point of view of the State. From time to time the millers try to combine against the paddy sellers and, in fact, a 'ring' exists for the purpose of exerting pressure on the market; but owing to the lack of confidence between the various nationalities concerned, the arrangement usually fails to work just when it is most wanted.

On the arrival of a boat-load of paddy at the wharf of the miller who intends to buy it, a severe contest of wits precedes the clinching of the bargain. Samples of grain are carefully examined by the purchaser and his experts who determine with great accuracy and in spite of shrill denials and expostulations, the

percentage of inferior grain that the seller has mixed with the good. The extent to which the rice is likely to break in milling is also established by various tests. For paddy considered in bulk the unit is the *kwien*, literally 'a cartload,' a measure which consists of eighty baskets in the ricefields and of eighty buckets in the mills. But as the basket may contain from 16 to 22 lbs. of grain and the bucket anything between 28 and 42 lbs., to talk of *kwien* is evidently to discuss something quite indefinite. Consequently the fixing of the actual content of the boatload of paddy provides further lengthy argument before the price can be finally agreed upon. The bargain having at length been struck, the grain is carried into the mill storehouse or godown, which work, and indeed all transference of paddy or rice from boat to mill and *vice versa*, is performed by Chinese porters of whom some ten or twelve thousand make a comfortable living in Bangkok, with an organisation that would probably make considerable trouble for any miller who might attempt to substitute mechanical for man-power transport.

A certain portion of the rice manufactured is of the quality known as 'cargo rice' or grain only partially milled, with the thin-coloured pellicule of nitrogenous composition adhering to it and with a good deal of the husk still present. The remainder is 'white rice,' milled until the nitrogenous pellicule is entirely removed and only the white starchy interior part of the grain left. With improvements in machinery and the high rates of ocean freights that now prevail, the proportion of 'cargo rice' made is diminishing rapidly, while that of 'white rice' is increasing. Milled rice is sold by the 'koyan,' a corruption of *kwien*, which equals 22 piculs or 2,930 lbs. of cargo rice, and 23 piculs or 3,060 lbs. of white rice. The high polish noticeable on the rice used for food in Europe is not put on in the

mills of Siam, but is obtained by further milling after arrival of the grain in Europe from abroad. The larger rice mills, which are all built of timber and galvanised iron, are very high. The grain is hoisted up to the top, is there fed into the milling machinery, through which it passes and, descending by its own weight, ultimately returns to the ground floor in the form of rice, having in its downward passage been husked, winnowed, and ground clean. The old-fashioned millstones have long been replaced by pairs of cast-iron discs about five feet in diameter, covered on the opposing faces with a mixture of corundum (emery) and cement, the upper disc fixed and the lower revolving rapidly. These remove the husk from the grain. Ingenious processes of shaking and fanning then separate the husk from the rice and divide the whole grains from the broken. Finally the rice is passed between a rapidly revolving cone, faced, like the husking discs, with corundum and cement, and a more or less close-fitting stationary wire casing, by the action of which machine the outer pellicule is rubbed off the grain and the white rice of commerce produced. The fine particles removed from the grain in this last operation form the valuable by-product known as ricemeal.

Speaking generally, it may be said that the better the quality of rice, the smaller will be the percentage of broken grain after milling. Siamese epicures demand a rice that is pure white and as little broken as possible, and consequently many of the smaller mills that cater chiefly for the consumption of the better classes, use only the best grain and produce rice of which not more than from five to ten per cent. is broken. Such quality of grain is not confined to a single variety but may be obtained from many, provided conditions of growth have been propitious. Inferior qualities produce more broken rice, the proportion in the lowest grades, if grown under bad

weather conditions amounting sometimes to as much as 80 per cent. The standard quality of white rice on which market quotations are based consists half of whole and half of broken grains.

Rice, from the miller's point of view, is divided into four main classes, which include all the varieties grown. The first of these is *khao na suan* or 'garden rice,' and includes the best varieties, that is the whitest, oiliest and longest grained, whether transplanted or sown broadcast. The second is *khao bao*, not necessarily the cultivators' *khao bao* or 'light paddy,' but a class including all the best quality short, thick and white-grained varieties cultivated by broadcast sowing. The third class is called *khao samruang*, a mixture of inferior varieties, some transplanted and some broadcast, while the fourth class is *khao na muang* or 'country rice,' which includes all the small-grained, coloured, and otherwise inferior broadcast varieties, the chief difference between the last two classes being the amount of coloured, red, green, black, &c., grains included. No. 1 Siam garden rice is better than the best quality of rice produced elsewhere in Further India or in India, and is probably as good as, if not better than, any rice in the world.

OTHER INDUSTRIES.

Boat-building as a Siamese industry has declined since the early days of the nineteenth century, when the great junks employed in the China trade and the sailing vessels of the king and other Siamese merchants were built on the banks of the Menam Chao Phaya; but a large number of river-boats and sea-fishing boats are still annually launched at Bangkok and at many of the inland riverine towns, while, recently, steam launches and sea-going wooden steamers have been built in Bangkok. Down the western shore of the Gulf of Siam, less than a century ago, the pirates who

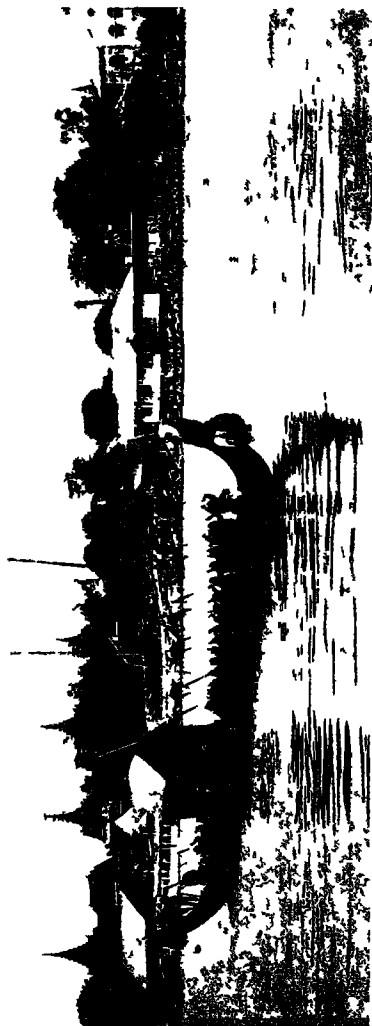
infested the rivers of the Malay dependencies were exceedingly proficient in the art of building fast-sailing ships and great sea-going canoes in which to pursue their nefarious business. The pirating days passed away long since and the descendants of the rovers, still partial to a sea life, have become law-abiding sailormen and fishermen, employing the shipbuilding skill of their race in fashioning trading schooners and fishing boats. Steam traffic has now taken most of the coast trade, but fine ships are still occasionally built, while the fishing boats constructed by this primitive people are of a grace, speed and sea-worthiness difficult to surpass.

The foundation of all Siamese-built river boats, and of most of the smaller sea-going craft, is the dug-out, or hollowed trunk of a tree which in small canoes forms the entire vessel, and in large boats is the keel and bottom upon which the rest of the structure is superimposed. By this arrangement a vessel is obtained which never leaks, however often it may strike against snags or rocks, is quick to turn in narrow waterways, is of shallow draft and when grounded is easy to push over a muddy bottom, a vessel, in fact, admirably adapted to the purposes for which it is required. The timbers used for boat-building are the *mai yang* and *mai takhien* for dug-outs, and teak or *mai takhien* for superstructure. Probably the largest dug-outs in the world are the Siamese royal state barges. These are of *mai yang* wood and each boat consists of a single tree. They are 150 feet or rather more in length and about eleven feet beam, and are made in exactly the same way as the smallest canoe, the tree being hollowed out with adzes, submerged in water until thoroughly soaked and then opened out over fire. The symmetry of these Royal barges, which are without superstructure of any kind, but are simply one piece of timber with prow and stern continuations, is quite perfect. In

ordinary boat-building no metal nails are ever used, the planks which form the superstructure being fastened to the ribs by means of strong wooden pegs, or tree-nails, of *mai takhien* or other hard wood. A well-built boat of this construction requires no repair for twenty years or more beyond a little occasional caulking, but the same cannot be said for the large numbers of boats which are now built in Siam on European lines. The best of these latter are short-lived in comparison with those built according to native models, their thin planking being ill adapted to the extremes of climate and rough usage to which they are subjected. A good deal of amateur boat-building is done in the monasteries, the monks in their leisure hours producing some of the very best of the smaller river craft.

Ever since the first application of the internal combustion engine to the propulsion of aquatic vessels, the Siamese have been devoted to motor-boats both for business and pleasure. The innumerable steam launches which at one time navigated all the rivers and creeks, carrying passengers and the mails and towing rice-boats, have to a great extent been replaced by motor boats, while there is scarcely a well-to-do Siamese householder of the upper class who does not own at least one motor-propelled pleasure boat. During the spell of fine weather that usually succeeds the rainy season, when the waters are highest, the river and the main canals round Bangkok are covered with motor craft of every kind, from the elegant racer with highly varnished, quarter-inch teak or mahogany hull and powerful Thornycroft engine, to the tiny dug-out with an Evinrude motor shipped over the stern. At this season regattas are held frequently, and much time and money are squandered in designing and building boats of high speed.

Pottery. It is probable that the making of pottery



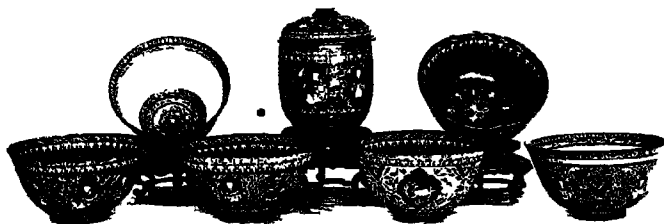
A ROYAL BARGE IN SIAM.



OLD SAWANKHALOK POTTERY



SIAMO CHINESE PORCELAIN 18TH CENTURY
(See p 11)



SIAMO CHINESE PORCELAIN LATE 19TH CENTURY
(See p 11)

is one of the very oldest industries practised in Siam, for though no pottery which can with any assurance be placed earlier than fifteen hundred years ago has actually been found in the country, the recent discovery in Kambodia of primitive earthenware pots and other articles together with later neolithic celts, leads to the inference that the early races which impartially inhabited both countries, were possessed of at least a rudimentary knowledge of the properties and uses of burnt clay. Amongst the ruins of many of the cities of the north, terra-cotta jars, pots, statuettes, pedestals, etc., are commonly found, executed in a rude but forceful style and probably dating back to about the seventh century A.D.

In the days of Sukhothai-Sawankalok's prosperity the art of making porcelain was introduced into that kingdom from China, and Chinese experts were induced, by King Arunawati Ruang it is said, to settle at the capital and to ply their handicraft there. Porcelain kilns were established on the bank of the river a few miles above Sawankalok city and in the outskirts of Sukhothai and the industry apparently persisted there for some six or seven centuries, that is down to the middle of the eighteenth century A.D. Owing to the absence of suitable clay the quality of the porcelain was never good, and though the workmanship and the glazing were at first of superior quality, the industry would seem to have declined into the manufacture of coarse and rough crockery only, a long time before the Burmese conquest put an end to it altogether.

The sites of the ancient kilns are marked by huge heaps of shards and misshapen or ill-burnt pottery, the refuse thrown out of the kilns and discarded by many generations of potters, and, though the quantity of finished Sawankalok ware now to be found in different parts of the country is surprisingly small, it is clear from the size and number of these heaps

that a great deal of the pottery must have been manufactured from time to time. It is even possible that it was exported, and that the ancient jars found amongst the Dayaks of Borneo and held in so much esteem by them at the present day were made at Sawankalok or Sukhothai, for, though it is generally held that these come from China, the fact that they are called 'Siamese Jars' by the Dayaks themselves seems to point to a Siamese origin. Gerini further maintains that the coarser pieces of the celadon ware known as 'Martaban' throughout the Mohammedan Orient were made at Sawankalok, and were exported from the towns on the west coast of Further India in the neighbourhood of Moulmein or Martaban. The older Sawankalok wares were almost always of a uniform, pale grey blue, or yellow, and were usually 'crackled.' The pottery and porcelain of Sukhothai, which is not so well known as that of Sawankalok, seems to have been of a dirty white and grey colour. At a later date when Chinese blue porcelain became fashionable with the Siamese, attempts were made to imitate the same locally; attempts which, judging by examples still extant, were quite without success. In fact by the time this period had been reached the industry had fallen into decay, and the persevering Chinese had begun to supply large quantities of porcelain from China, producing in time a ware specially designed for the Siamese market and decorated with coloured designs for which a demand had grown up there. Subsequent to the Burmese conquest Chinese wares altogether replaced even the roughest and cheapest locally-made articles, and all the coloured porcelain now sold to collectors as ancient Siamese ware is undoubtedly of Chinese manufacture and is Siamese only in design.

The only branch of the pottery industry now practised in Siam is the manufacture of earthenware pots, pans and jars, some of which are roughly glazed

while most are plain terra-cotta. Large red porous jars of some 20 gallons capacity are made in considerable quantity and are exported to neighbouring countries, where they are known as 'Siam Jars,' a very different article from the 'Siamese Jars' of the Dayaks of Borneo. The beautiful blue, yellow and red glazed tiles used for the roofs of Wats and royal buildings are usually imported from China, though an enterprising Chinese potter has started a factory of them in Bangkok. Terra-cotta charcoal-stoves, porous water-goglets and pots of a great variety of shape and of many degrees of fineness are made to supply local demands, while a peculiar pale grey, glazed pottery from Chieng Mai and a white unglazed earthenware from Ubon are to be noted. Mention should also be made of the very elegant earthenware teapots on which the Siamese set great store. These are imported from China in a rough and unfinished condition, and are fitted in Siam with brass handles and rims, and polished by a peculiar secret process until the terra-cotta is absolutely smooth and shines with a high lustre. The finished article commands a good price, and old teapots of this kind are often considered of more value than if made of silver.

Silk. The production of raw silk is a very old industry in Siam, while silk-weaving has been considered a polite occupation for female leisure from the remotest times, the old chronicles and stories abounding with allusions to the use of the loom by ladies, even of the highest rank. Silk-weaving is still a general employment for women, but the material grown in the country is no longer considered fit to use, and practically all the raw silk used is imported from British India, from French Indo-China and from Burma.

The rearing of silk-worms forms a minor industry all over Eastern, and in some parts of Northern Siam, and in the year 1902 King Rama V conceived the idea

of trying to raise the quality of the silk produced to the level of that of neighbouring countries. A sum of money having been set aside for the purpose, a party of Japanese sericultural experts was engaged and a series of experiments was undertaken with a view to discovering the faults of the industry and the best way to remedy them. In due course a school was opened at Korat and a silk-worm breeding establishment was set up at Buriram, both places in Eastern Siam, while Japanese instructors perambulated the country to inculcate amongst the inhabitants the alterations in method that investigation had shown to be necessary. And not content with these efforts to improve the production of raw silk, the experts set about reform in the matter of weaving, and introduced many new and complicated Japanese looms in the use of which they gave instruction to large classes of women called in from the country villages by order of the local authorities. Judging by official reports and superficial appearances, things seemed to be going well, but after some six or seven years had passed it was noticed that the raw silk exported from the country had not improved in value or quantity, while the amount of foreign raw silk imported was practically the same as before. A close investigation then revealed the fact that though hundreds of girls had received free instruction in rearing and weaving, and though large quantities of new implements had been distributed amongst them without charge of any kind, the apathy and indifference of the people were such that the earnest endeavours of the Government had not produced the slightest permanent effect, the general verdict as regards the methods of the Japanese experts being that these were both troublesome and wasteful and therefore to be adopted only by fools. Hence the young women who had undergone training at the Government school, and had incidentally received a subsistence allowance from the State while doing so, on returning to their homes divested them-



LAO GIRL WEAVING.

selves as soon as possible of any knowledge they had acquired and, if they went in for silk at all, adopted the ways advocated by their grandmothers; while the new-fangled foreign implements given them on leaving school were stuck up in the thatch of the paternal cottage, where it was hoped that any foreign magic adhering to them might bring general good luck to the family.

Efforts made by the authorities to combat this astonishing lethargy only had the effect of decreasing the cultivation of silk wherever they were applied, and the Government, finding itself therefore equally unable either to lead or to drive its people to better things, abandoned the whole undertaking and left the silk-growers to look after themselves. With the weavers the Japanese experts had never had even the shadow of an influence, and thus the silk situation in 1922 was exactly as in 1901, before the King set about improving it.

The raw silk which is used for weaving in Eastern Siam comes from French Indo-China and costs about three times as much as the local produce. This latter, coarse, dirty and uneven, is bought up by Chinese, sold by them to natives of India at Bangkok and exported to India where it is used for mixing with inferior silk manufactures. The raw silk which is woven in Northern Siam is bought in the bazaar at Mandalay, is brought to Siam and, in the form of silk piece-goods, is returned to Burma to be sold. It is to be noted that the silk weavers of Siam are clever and capable, and produce cloth of a wonderful texture and brilliance considering the antediluvian implements they use.

Timber-milling. Situated on the banks of the river Menam Chao Phaya at Bangkok are many saw-mills where the teak which comes down from the north, and also a certain amount of other timber obtained in various parts of the country, is cut up and prepared for export or for local consumption. The majority of

the mills are small and are equipped with primitive machinery, but nine of them, of which four are owned by British, one by Danish, one by French and three by Chinese firms, are large, well-found establishments furnished with highly-efficient power-driven machinery and capable of turning out a large amount of work. These are all under the supervision of European engineers and employ upwards of 1,000 persons of Siamese, Burmese and Chinese nationality. The mills are chiefly occupied in converting round teak logs into squared timber for export, but a good deal of plank and scantling cutting is also done. The arrangement of the mills is that of timber mills in other parts of the world. They are fitted with overhead travelling cranes by which the logs are taken up and carried to the circular-saw racks. Sawdust and refuse timber constitute the fuel on which the steam generating furnaces are fed. About 100,000 tons of timber pass through the mills annually, of which 85,000 tons are exported and some 15,000 tons consumed locally.

Brick-making for the building of Wat palaces and city walls has evidently been carried on in Siam from very ancient times. Formerly it was not an industry in the ordinary acceptation of the term, bricks being obtained by means of forced labour, at the caprice or necessity of a ruler, and not ever made as a means of livelihood. But the developments of recent years have introduced masonry dwelling-houses, and also a great demand for something more durable than mud and more easily obtainable than stone, as foundation for the ever-lengthening streets of Bangkok, wherefore people have taken to the making of bricks as a part-time industry, the inhabitants of villages where the soil is suitable occupying themselves during the agricultural slack season in brick-fields conducted on a more or less communal basis. The Môn inhabitants of riverine districts between Ayuthia and Bangkok, as the descendants of those who, as war captives, were forced to provide bricks in olden times, much in the

manner of the Children of Israel in Egypt, are now the chief practitioners in the trade, from which they derive good profit when times are good and the building trade consequently brisk. But because they are made by uncontrolled free labour intent on obtaining the maximum profit for the minimum of trouble, the modern Môn bricks are not to be compared with those that are seen in the ruins of ancient buildings and fortifications, and so much is this the case that brick-fields under European control are coming into existence, the output of which is in demand for all masonry likely to be subjected to severe strain. It is to be noted also that reinforced concrete, made with cement of excellent quality produced by a well-managed local Cement Works, is growing in popularity at a rate that foreshadows a diminution in the profits of brick-making in the near future.

Paper-making is a minor part-time industry that is fitfully carried on here and there. Fibre from the tree *Brousonetia papyrifera* which grows wild in profusion in many places, is, by a very primitive process, converted into small sheets of coarse substance, tough and limp, and of a grey colour. This was the only paper available before the introduction of the foreign article and it was used either in its natural colour and written upon with Indian ink, or was dyed black, when a yellowish white artificial chalk was employed to mark it. Many documents of great national or literary value, made on this rough paper, are preserved in the Royal archives and in the National Library, but the material is seldom used now for writing purposes and its manufacture is not likely to persist for long. The making of paper fit for modern requirements was started in 1922 by a Government Department as an experiment, but hitherto nothing has been done in this direction by private enterprise, though what with bamboo jungles and the tree mentioned above, there is no lack of suitable raw material in the country.

COMMERCE AND TRADE.

Ancient Commerce. In very early times, long before any European had ever set foot in Siam, in fact, at a period when the European was an iron-encased semi-savage, too much absorbed in knocking out the brains of his neighbours and in keeping his own skull uncracked to bother about trade or foreign travel, this country had already a well-established commerce with the countries contiguous to her frontiers and was in trade relations with China and with India. According to old records, the southern provinces appear to have been the main points of attraction for the earliest foreign traders, for ships from the Indian Coast regularly visited 'Junk Ceylon' and other parts, carrying thence tin, gold and spices; while a fleet of Chinese junks called annually at various ports and settlements on the east side of the Malay Peninsula, and in the Gulf, some of which exist no longer except as names in ancient chronicles. Later, when Ayuthia rose to fame, Indian merchants established an overland route from their west-side ports of call to that city, while the Chinese junks, extending their beat further to the northward, ascended the Menam Chao Phaya to do business at the capital of the country.)

Early European Traders. When, early in the sixteenth century, the Portuguese filibustering merchants first visited Siam, they found at all the ports as well as at the capital, long-settled communities of Indian and Chinese merchants engaged in a profitable trade. They lost no time in entering into competition with these, and so rapid was their advance that in twenty years' time the factory or trading settlement which they had founded at Patani in 1516, contained over three hundred Europeans, while at Ayuthia itself the white population had become so considerable by the year 1548 as to supply a battalion of volunteers for the King's service against Pegu.

Marvellous stories of the overflowing wealth of the Far East, combined with the sight of the profits reaped by these who returned thence, raised in those early times a great desire throughout Portugal to participate in merchant ventures over-seas, and in all the seaport towns of that country, vessels were continually fitting out and sailing away, with the blessing of the Church, upon high adventure to the Orient. Though ostensibly undertaken for trading purposes, these expeditions were all lavishly supplied with arms, and investors took much comfort in the thought that, though trade might fail, their adventurers would surely find opportunities for despoiling the heathen, to the glory of God and to their own enrichment. Nor were they at all mistaken, for the leaders of the adventurers, finding not seldom that to get rich by lawful commerce was a more lengthy process than they liked, resorted in the name of religion to pillaging defenceless towns and to piracy on the high seas, whereby they amassed great wealth and incidentally brought the hatred of the East upon their race and caused the name of Portugal to stink in the nostrils of all Asia. Siam received a liberal share of these pious gentlemen. Up and down the west coast of the Malay Peninsula and round the shores of the Gulf they cruised, and gathered a rich harvest from the junks which they met and the towns which they visited, so that, in spite of the fact that many individuals of their race had settled in Siam, had started mission work and had even attained to positions of trust in the king's service, the coming of the Dutch and English into the Eastern seas was hailed with joy by the Siamese, as a possible deliverance from the horrid Portuguese scourge. Consequently when the Dutch and English East India Companies began operations in Siam, they soon ousted the Portuguese from their monopoly of trade and there ensued a very keen competition between the merchants of all three

nationalities which, with much bitter feeling and not a little bloodshed, continued all through the seventeenth century.

By ancient custom, the foreign trade of Siam was a royal monopoly and much of the revenue was paid in form of produce, such articles as tin, pepper, sticklac, gum-benjamin, beeswax, ebony, rosewood and others, being collected from the particular provinces in which they abounded, in lieu of gold or silver bullion, coined money or other form of currency. These were all stored in the royal warehouses and were exported by the royal ships or sold to foreign traders, while all export trade by private individuals was discouraged. It followed that, as no business could be done except by the royal favour, no efforts were spared by the foreign merchants to keep the King well disposed towards themselves in particular, while each strove, by insinuation and accusation, to bring discredit upon the others. At first the Dutch and English used the port of Patani as their emporium and seldom went further north, but after some ten years or so, the trade of Patani declining, they moved up to Ayuthia, where they established factories and where, for a time, they drove a thriving business. The Dutch, however, ultimately got the upper hand, and both Portuguese and British trade declined until the houses of these latter nations had to be given up, though many independent merchants (interlopers as the East India Companies dubbed them) continued to trade on their own account. In 1680 a French factory was established, but, its object being rather political than commercial, was without any direct effect upon the trade of the country. Indirectly, however, its results were far-reaching and disastrous, for it was owing to French ambitions that, a few years later, a revolution took place in Siam, one result of which was the complete dislocation of all trade with Europeans and the practical closing of the country to foreign merchants other than Chinese.

The sea-borne trade of the country, however, by no means declined because Europeans no longer had a share in it. On the contrary, commerce with other countries of the Far East increased rapidly, and soon a large fleet of junks was devoted solely to the Chino-Siamese trade. At the same time a number of ships were built by the King, which carried his produce to Cochin-China, the Malay Peninsula ports, Java, Sumatra and even to the coast of India and to Japan. Occasionally European ships that visited Siam at this time met with treatment that did not encourage them to return.

Towards the end of the eighteenth century efforts were made in France to reawaken interest in the country, and in the *Histoire de Siam* by M. Turpin may be read the incitements of that patriot to his countrymen to re-establish themselves in Siam, to demand payment of century-old debts said to be still due to the French Company and, if gentle arguments failed, to take the whole kingdom, which, he said, could be accomplished with ease by a couple of thousand French soldiers ! All this, however, came to nothing, and when John Crawford visited Bangkok, now the capital, in 1862, he found a large and flourishing foreign trade with scarcely a single European man or ship engaged in it.

The First Commercial Treaties. The making of the treaty of 1826-27 between the Hon. East India Company (British) and Siam was the first serious step towards reviving European trade. This treaty and the articles subsequently added thereto, secured the rights of all British ships to visit the ports of Siam and to trade, subject to the payment of such duties as might from time to time be ordered, but left the question of the settlement of British subjects in Bangkok or any other part of the country entirely in the hands of the King. The United States Government effected a somewhat similar treaty in 1833. Resulting from these rearrangements, the number of Indian merchants in Bangkok increased considerably, and

vessels flying the British and American flags appeared occasionally in the Menam Chao Phaya. By 1840 one English house of business had been successfully established, receiving merchandise, principally cotton-yarn and piece goods from Liverpool direct and despatching thither some half-dozen ships a year with cargoes of tea and sugar, ivory, gamboge, dye-woods, tin, lead, spices, etc. The American trade, which was in the same commodities, was considerably smaller. At this time and for some years subsequently, a large quantity of sugar was exported, twenty or more ships owned by British subjects annually carrying cargoes of this product to Singapore and Bombay. All this, however, represented a very small proportion of the foreign trade of the country, which continued to be carried in the King's ships or in Chinese junks as before. Indeed, considering the numerous disadvantages under which, the treaty notwithstanding, British trade was conducted, it is a matter for some surprise that it persisted at all. All obligations and limitations which the treaty imposed upon the British merchants were rigidly enforced by the officials in authority, whereas the corresponding privileges that were supposed to have been secured were, as often as not, totally ignored. Meanwhile the Chinese traders, having no treaty, were bound by no obligations, and secured all the privilege they wanted by the simple process of buying every official who had anything to do with the matter. Thus while the British were bound by treaty not to build ships, not to occupy houses or land, not to export rice and not to travel in the interior, the Chinese did all of those things without hindrance of any kind. On the other hand the Government, though pledged by the treaty to allow no monopolies and to give equal chances to all and no favour to any, ignored this obligation and, by farming the trade in most articles to the influential classes who immediately sub-let to Chinese merchants, effectually debarred the British from obtaining cargoes

except on payment of ruinous prices to the very persons against whom they were in competition. The situation in time became almost intolerable, and, moreover, attempts on the part of the Hon. East India Company to improve matters by a revision of the treaty were frustrated by the interest which the Chinese were able to make with the King and the chief officers of State. Efforts made by the United States Government to revise the treaty of that nation with Siam met with no better results.

Later Commercial Treaties. The accession of King Maha Mongkut (Rama IV) in 1851, however, brought about an immediate change in the aspect of affairs, for that monarch having given much time to the study of European science, languages and customs, was not only imbued with strong European sympathies, but had grasped the fact that to encourage the notoriously evil practices of a few Chinese monopoly-holders at the expense of trade with the civilized world, and contrary to the often expressed desires of the governments of at least two powerful nations, was the worst kind of policy, and one which, if persisted in, must infallibly plunge his country into innumerable difficulties. He therefore early revealed an inclination to better the position of the European merchants resorting to Siam and when, in 1855, Sir John Bowring was sent to Bangkok by the British Government to negotiate, that officer found little difficulty in concluding an arrangement which placed British trade with Siam on an entirely new footing, and executed a new treaty which, followed in due time by similar conventions with most of the Powers, was in fact the key that opened the great resources of Siam to the commerce of the Western World. This important document not only secured to all British merchants a treatment in all respects equal to that meted out to others; provided for the appointment of a Consul to guard their interests; enabled them to penetrate into the

interior of the country to buy their goods where they pleased and even to grow their own produce in certain districts ; but, in a series of elaborate schedules, it definitely fixed the import and export duties, the octroi, the revenue on all kinds of produce and, in fact, all the taxes which British subjects could be called upon to pay. Thus, as Sir John himself recorded in the account of his mission, "it was clear that the treaty involved a total revolution in all the financial machinery of the government, that it must bring about a total change in the whole system of taxation, that it took up a large proportion of the existing sources of revenue, and that it uprooted a great number of privileges and monopolies which had not only been long established but which were held by the most influential nobles and the highest functionaries of the State." It is probable that neither the King, rather frightened at the magnitude of his innovations, nor Sir John, breathing anxious prayers that his endeavours might prove a universal blessing, anticipated to the full the far-reaching effects of the treaty or the advantages, notwithstanding the drawbacks of extra-territoriality, which the measure was shortly to confer upon the trade, the wealth and the general progress and welfare of Siam. Had they been able to foresee the prosperous condition to which the country has since attained as a direct result of their labours, the pleasure which, we are told, was inspired in the hearts of these two benevolent old statesmen as they sat together and listened to the sound of distant guns saluting their new treaty, would certainly have been many times enhanced.

Growth of European and Decline of Chinese Trade. The years which followed the new treaties brought an expansion of foreign trade, at first not very conspicuous, but later becoming increasingly evident with every year that passed. The Chinese trade, however, never thrived after the making of the treaties with European Powers, but, bereft of the support of the many corruptions by

which it had formerly lived, and exposed to the comparatively honest and quite relentless competition of white men, it languished and declined. Gradually, also, the once proud fleet of over four hundred junks engaged in the China trade was reduced by the competition of European-owned steamers to less than a hundred. The square-rigged vessels of the king and the nobility were the next to go. In spite of their excellent build and many sea-worthy qualities, they failed after a time to maintain the unequal struggle against modern progress and, one by one, were sold out of the country or were beached, stripped of their fittings and left to rot in the mud of the river on whose waters they had long so proudly floated. Before 1890, they had finally disappeared, and the only sailing vessels of European rig now visiting the port of Bangkok are the Norwegian and British lumber ships, which sometimes call for cargoes of teak, and a few small coasting schooners from the Malay States. During this period, over 55 per cent. of the foreign trade of Siam was carried in English bottoms. The value of the trade which in 1885 amounted to £1,900,000 exports and £1,350,000 imports, continued to increase, and in 1894 had risen to £2,450,000 exports and £1,710,000 imports.

Steam vessels had been known to the Siamese for some time before 1857, the year of the treaty, and, indeed, one small steam launch had been constructed in Bangkok in 1855, but as carriers of merchandise, steamers were almost unknown until, in the seventies, an iron vessel of some 400 tons, part owned in Siam and named the *Chao Phaya*, began to ply regularly between Singapore and Bangkok. Consular trade reports of forty-five years ago expatiate on the many advantages offered by this vessel, her speed, punctuality, and the magnificence of her accommodation. Having run for many years and carried amongst her passengers, Princes, Ministers of State, Foreign Envoys and many other distinguished travellers, she now lies a wreck

in the mouth of one of the peninsular East Coast rivers where the curious may find her, the hulk of a little eight-knot wrought-iron tramp, whose accommodation can never have been such as would nowadays be tolerated by the humblest passenger from Singapore to Bangkok.

This pioneer of Siamese steamer traffic was not left very long without competition. The merchants of Singapore, Chinese as well as English, gradually discovered that facilities for trade with Siam were many and that the profits to be made in it were good, and other vessels were shortly placed on the Bangkok-Singapore run. By 1884 the total number of vessels, steamers, and sailing ships, excluding junks, to clear the port in the twelve-month, had risen to over 400, of which more than half were under the British flag, the remainder being Siamese, with occasional Dutchmen, Frenchmen or Germans.

Near the end of the eighties a branch of the great Holt line of steamers was established between Singapore and Bangkok, and a few years later a company called the Scottish Oriental Company, Ltd., opened up a regular and direct trade between Bangkok and Hongkong and the Southern China ports. For some time these two local lines had everything their own way and, by 1897, had driven out of the carrying trade all but a few privately owned or heavily subsidised vessels. In that year the share of British shipping in the carrying trade was 74 per cent. of the whole.

Occasional German ships visited Bangkok in the days when England and Siam between them did nearly all the carrying trade. But German ships anywhere were few and far between in those early times and, German interests in Siam being practically non-existent, the navigation of the Gulf of Siam was seldom undertaken by vessels of that nation. The development of the Siamese rice-trade, however, brought several Germans to take a share in it and led

to the establishment of more than one German rice-mill. This naturally caused an increase in German shipping, with the result that by the year 1897 a few German steamers were in the habit of coming regularly to Bangkok and about 8 per cent. of the annual steam tonnage of the port was German.

The visit of King Chulalongkorn (Rama V) to the West brought Siam prominently to the notice of Europe just at a time when the North German Lloyd S.S. Company was in search of localities where it might establish branch lines of steamers to feed its growing Far Eastern service. Bangkok and its expanding trade seemed to offer all the advantages desired for such a branch, and negotiations with the existing British lines were therefore set on foot which resulted in the sale, at long figures, of the whole fleets of both Holt's Bangkok Branch Line and the Scottish Oriental Steamship Company. This move, though it gave German shipping a big preponderance in Siam and reduced the British to less than 20 per cent. of the whole, did not work out very well, for the drastic and thoroughly Teutonic efforts of the new-comers to prevent merchants from using any ships but theirs exasperated the rice-millers and caused them to resort extensively to the chartering of outside tramps. To add to the troubles of the North German Lloyd, a second German Steamship Company and the Japanese Nippon Yusen Kaisha entered into competition for the trade and caused violent freight wars ending in disastrous compromise.

At the beginning of 1914 about half the carrying trade of Siam was in German ships which, when the war began, were all laid up in the neutral safety of the Menam river, their place being taken by the ships of two British Companies, the Straits Steamship Co. of Singapore, and Butterfield & Swire's China Navigation Co. of Hongkong. Two years later, on the declaration of war against Germany by Siam, the entire German

fleet in Siamese waters became prize of war and was distributed amongst the Allies. At the same time the wharves and warehouses of the German firms formerly located on the banks of the Menam were converted to the use of the two British Companies just alluded to, while the British India Steam Navigation Co. opened an office, built a wharf and added Bangkok to the list of its innumerable Oriental ports; and thus the year 1921 saw the British mercantile flag, after a partial eclipse of twenty years' duration, once more entirely predominant in the Gulf. Moreover, as though in order to complete the ousting of the German, the Siamese Government had formed a company to run some of the confiscated ships, while the Japanese and Danish lines that had used the port of Bangkok before the war had added to the strength of their fleets in Siamese waters.

Growth of Commerce. In 1896, three years after the trouble with the French when many persons believed that Siam as an independent kingdom would shortly disappear, a further impetus was given to foreign trade by the signing of the Anglo-French agreement guaranteeing the autonomy of Siam, which released for local investment much wealth which had been withheld owing to the uncertainty of the situation. It was owing largely to this fortunate arrangement that, between 1894 and 1904, the total value of trade of the port of Bangkok increased by three and a half million sterling exports, and two and a half million imports, in fact, more than doubled itself. The end of the following decade saw a further increase of two million sterling exports and a million imports, and when the war broke out the value of the annual trade was £7,800,000 exports and £6,100,000 imports. From the staggering shocks of 1914, which disorganised commerce in Siam as much as elsewhere, this country made an unexpectedly rapid recovery and by the middle of 1915 had got back, from the point of view of value,

practically to normal trade conditions. But not in other respects. In regard to transport, origin and quality of goods, her imports were entirely different, for not only had the German ships been replaced by others, but though some fools and many knaves in England at first cried "business as usual," the Far Eastern trade of Europe was for the time being dead and Japan and the United States of America stepped in and took it, filling the markets, including Siam, with hastily manufactured goods having more or less superficial resemblance to those that they supplanted. As to exports, the teak trade practically stopped, while that of mineral products increased under demands of the Allies for munition materials. The rice production continued as before, Japan taking that part of it that could no longer go to Europe.

In the five years that followed, circumstances combined to enhance the value of the country's trade to figures never before approached in its history. For each of the three years between April 1915 and March 1918 (the Siamese year ending on March 31st), the rice crop yielded over eleven hundred thousand tons of milled rice available for export, the average for any previous three years having seldom exceeded nine hundred thousand, while the general world shortage of food caused a gradual rise in the value of the rice accompanied by a similar increase in the cost of practically all imports.

In the following year, though the volume of both exports and imports fell off, a very large rise in values took place, the demand for rice, at practically any price, becoming so intense as to force the Government to place a partial restriction on the export in order to keep a sufficient food supply in the country. The rice crop of 1919 was as near being a total failure as has ever happened in Siam and it looked at one time as though the country was to be visited with famine. The partial restriction on exports of rice was therefore

converted in December 1919 into total prohibition, but the very high prices obtained during the period of partial restriction together with the astonishing sums demanded and cheerfully paid for all imports, brought the total value of the country's trade for the year April 1919—March 1920, to record figures. The exports for that year were valued at 177 millions of ticals and the imports at 138 millions. Moreover it so happened that the average annual exchange value of the tical rose from 1/6 to 1/9 so that the trade for that year amounted, in sterling, to fifteen and a half millions exports and twelve millions imports or double its value in the year before the war.

During the year next ensuing, April 1920—March 1921 there prevailed a state of things almost without precedent in the history of the country. The complete embargo on the export of rice continued until the condition of the next crop showed itself to be satisfactory, that is, all through the first eight months of the year, but the pockets of the people were still bulging with the proceeds of sales of the early part of 1919 and, with the object of removing that bulge, importers continued to pour into the country vast quantities of foreign goods which they bought at incredible prices and sold for sums still more incredible. Consequently during those eight months the usual balance of trade was completely reversed, the exports amounting to not more than a quarter the value of imports.

In December, the rice crop being assured, control was removed entirely. But in the meanwhile the apparently insatiable demand of the outside world for rice had vanished, prices had fallen to pre-war levels, at which the people would not sell, pockets were empty and the power to buy luxuries at fabulous prices had evaporated, stocks of unsaleable imports filled every warehouse and more continued to arrive for which there was not storage room, bankers grew

crusty and unaccommodating, cash and credit simply were not, the Royal Treasury trembled for its revenues, and merchants looked on in enforced idleness while the great profits so recently acquired, dissolved and passed like dreams away. The country, in fact, found itself in the throes of a pronounced slump.

About March 1921, however, things had touched bottom, and an upward tendency became visible. The outside demand for rice improved, and those merchants who had cut their losses and still survived, resumed operations on conditions very different from the recent business orgy through which they had passed, and more in consonance with the reasonable standards of pre-war times.

EXPORTS FROM BANGKOK.

Amongst the exports from Bangkok the two articles, rice and teak, have for very many years together largely exceeded in value the aggregate of all other exports, the average figures for the five years ending March 1919 being, in fact, 11·5 millions sterling, or nearly nine-tenths of the whole export trade. It is remarkable that when Siamese commerce first began to attract notice, neither of these articles were to be counted upon as exports at all. In the beginning of European trade with Siam, the commodities for which the merchants quarrelled and intrigued were sugar, pepper, cardamoms, gamboge, gum-benjamin, ivory, tortoise-shell, ebony, rosewood, sapan-wood and eagle-wood, all articles of luxury which, on account of their rarity, commanded fabulous prices. Great risks of shipwreck, disease, and war were encountered by the men who sailed in search of these commodities, but the profits accruing to those who were fortunate enough to bring home a full cargo, were so great that volunteers were never far to seek for manning the tiny, ill-found vessels annually venturing forth on voyages

which, under the best circumstances, took years in the accomplishment.

The statistics of the Bangkok Custom House still contain most of the above articles, though the quantities now exported are usually trivial and, in addition to these, there are several articles entered, the presence of which can hardly fail to arouse speculation in the mind of the uninitiated as to the uses for which these same may be intended. Such articles are birds'-nests, tigers'-bones, tigers'-glue, deer-horns in velvet, rhinoceros'-horns, sharks'-fins, and armadillo-skins, all of which are not only exported but appear to command in most instances extraordinarily high prices. Thus birds'-nests are valued at about £1 per lb., tiger's-glue at 5s. per lb., deer-horns in velvet at £3 the pair, rhinoceros'-horns at £2 per lb. and sharks'-fins and armadillo-skins at about 2s. per lb. A further glance at the statistics shows that these commodities are nearly all shipped to Hongkong or the Chinese ports, that is, they are for Chinese consumption. Now the Chinese pharmacopoeia sets an immense value upon the strengthening qualities which are supposed to reside in certain parts of many animals. The celebrated 'edible birds'-nests,' being made entirely from a gelatinous substance secreted during the breeding season by certain species of martin, are supposed to contain all the strength of the unfortunate little architect in a concentrated form, while rhinoceros'-horns and deer-horns, which by their rapid growth visibly absorb the substance of the owner, are deemed to consist simply of vital energy in a peculiarly condensed form. The tiger is the very incarnation of ferocity and strength and if, as European doctors find, mere essence of beef supplies a powerful stimulant, how much more invigorating must be a decoction of the glue obtained by boiling down the king of beasts. The fact is, all these mysterious articles of commerce are in demand for the sole purpose of compounding

the invigorating tonics usually prescribed by the celestial medical faculty in cases of exhaustion of the vital forces.

The modern export trade of Siam, which may be said to date from early in the nineteenth century, at first consisted chiefly of cargoes of pepper and other spices, scented and ornamental woods of various kinds and re-exported Chinese tea and notions, but more especially of sugar. No accurate records of the commerce of those distant days have been preserved, but the writings of Neale, Bowring and others make it abundantly clear that the sugar trade was once one of the big things of the country. The masters of ships frequenting Bangkok after loading a cargo of sugar for their owners frequently bartered the guns and other ships' furniture in their charge for extra consignments which they ultimately disposed of to their own considerable profit, whereby it came about that the guns mounted in the old riverine forts guarding the approach to Bangkok bore the arms of many European States, whilst the owners found themselves, at every new voyage, under the necessity of replacing the guns of their ships, reported jettisoned at sea during storms ! In time, however, the boom waned, and the sugar-growing and refining industries fell off to such an extent that by 1880 the export had dwindled to a mere nothing. But in the meanwhile the rice trade had grown up and had come to occupy the attention of merchants to the practical exclusion of all else.

The Rice Trade. The best Siamese white rice is sent to Singapore, whence it is distributed through the Malay Archipelago and the countries adjacent thereto. It commands a better price than the product of French Indo-China and of Burma, and though this may be in some measure accounted for by the conservative nature of its consumers, it is also due to the fact that best Siamese rice is second to none in the world. Ordinary Siam white rice finds its way, via Singapore

and Hongkong, to most parts of the world. Great quantities are taken by China and in years of scarcity in Japan a brisk market is found in that country also. Cargo-rice, which is rice that has been roughly husked but not properly milled, was at one time shipped in considerable quantity to Europe (chiefly Germany) and to China via Hongkong; but in recent years, the volume of this export has decreased. The total amount of rice of all kinds exported from the country during the five years ending with March 1919 averages about 1,100,000 tons a year, the highest recorded export in any year being that of 1,200,000 tons for 1916-17. This is a large amount, but the country should be, and undoubtedly in future will be, able to export much more. The rice-lands of Siam are no whit less fertile than those of Burma, while the Siamese is to the full as able and intelligent a cultivator as his Burmese neighbour; both countries are rice-growing centres and sixty years ago were in very similar conditions as regards cultivated area, population and government, Siam, if anything, holding a slight advantage in all these respects. Yet at the present day the annual rice export of Burma, about two and a quarter million tons, is more than double that of Siam. The causes of the present great disparity are to be found in the facts that while the Indian Government has spent money freely in providing Burma with irrigation works, the Siamese Government has only recently begun to devote some of its income to this most profitable form of investment. Also in Burma every possible inducement and facility have been offered and even forced upon the peasantry to increase the output of the cultivated lands and to add to their extent, while in Siam only the smallest of efforts have been made in this direction. Finally, while the population of Lower Burma has more than doubled itself since the British occupation, that of Siam remained stationary, or perhaps declined, during

the course of the nineteenth century. Now, however, Siam is following the footsteps of Burma; the importance of irrigation works has been fully realised; cadastral surveys, land registration and an improved revenue administration are bringing about an increase in the area under cultivation, and hygienic measures are being taken to remove the causes which in the past have hindered the natural increase of the population.

The Teak Trade. Bangkok has exported a certain quantity of teak for many years, but it was not until the closing of the teak forests of Upper Burma after the annexation of that country by England in 1885, that the Siamese trade assumed important dimensions. Up to that time the trade had been chiefly in the hands of Chinese merchants and the timber sent out by them was so unreliable in quality that Siamese teak was very little in demand. The investment of European capital in the business of extraction and export of the timber and the consequent employment of trained European foresters, together with the inauguration of a Government Forest Department, soon had the effect of increasing and regulating the output, and at the same time of improving the quality, and Siam teak is now much in request and is considered equal to the best produced elsewhere. The average annual teak from Bangkok during the five years ending with 1887 was under 20,000 tons, valued at £130,000, and that for the five years ending 1909-10 was 85,000 tons, valued at nearly £1,000,000. Subsequently, what with a series of years when floating conditions were not good and with a State control of which the efficiency tended to improve, the average annual export fell gradually to the neighbourhood of 40,000 tons at a value of between £300,000 and £400,000, at which level it remained until, in 1919-20, good floating conditions, a heavy demand from India and Great Britain, better prices and high exchange, combined to send the export up to 70,000 tons and the value to £1,200,000.

Teak is exported in both steamers and in sailing ships, being taken on board at the timber mills in Bangkok where it has been sawn into squares, planks, shingles and scantlings, and carried to Europe, Bombay or Hongkong. The quantity yearly available for export fluctuates, as the supply floated out from the forests on the annual floods and rafted down to Bangkok depends largely upon the abundance or deficiency of the rainfall in the interior. Not all the Siamese teak export is from Bangkok, for about 40,000 logs which come from the forests of the north-west districts, are annually rafted down the Salwin river into Burma.

Cattle Trade. For many years Bangkok has carried on an export trade in cattle with Singapore, the meat supply of that place being at one time drawn almost entirely from the plains of Central and Eastern Siam. The business was in the hands of a gang of Indian British subjects established in Bangkok, whose buyers penetrated to the remotest parts of the interior. In the early days when British subjects were in full enjoyment of extra-territorial rights and when the people were only beginning to understand the meaning of the expression 'law and order,' these Indian cattle buyers had things very much their own way. They bought stolen cattle openly and with impunity, and as often as not evaded payment; they were not bothered by quarantine or any other regulations, and complaisant shipmasters permitted a total neglect of even most elementary precautions for the protection and care of the animals while in transit by sea. The trade was a profitable one and in 1897 as many as 28,000 head of bullocks were shipped from Bangkok. About then, however, the Siamese Government introduced quarantine regulations entailing detention of the animals, with, of course, incidental feeding, for some days prior to export. The rural police began to check cattle theft, thereby endangering the main source of supply, and the scandalous treatment of animals in transit caused

a public outcry which compelled masters of vessels to insist on proper precautions for protecting and feeding the beasts. Under these adverse circumstances the Indian dealers began to look about them for other ports and hinterlands, where they might find still persisting the primitive conditions by which they had so long profited. In this search they were successful for they found that through the numerous little ports of the east side of Southern Siam, the exploitation of which by small steamers from Singapore and Bangkok was just beginning, they could tap extensive districts, full of good horned cattle and inhabited by an unsophisticated people upon whom the blessings of administration according to modern Siamese methods had not yet been conferred. Here they at once started business, neglecting Bangkok to such an extent that in a few years the export of cattle from there ceased altogether. In course of time, however, circumstances, principal amongst which was the ever-growing demand in the Straits, caused a resumption of the Bangkok trade and ultimate recovery to an annual export of some 26,000 head valued at about £170,000.

The organisation of the Indian cattle trading group has been such that no competitors have hitherto been able to stand against them. Their devices for maintaining control of the trade are numerous, and by curious coincidence, when rival buyers or exporters have appeared in any port, it has more than once been immediately precedent to one of those periods when the authorities, in their zeal for the public health, have felt obliged to suspend the import of cattle into Singapore from that particular port. The principal result of the monopoly is that while the sale price of cattle rose by 300 per cent. between 1907 and 1921, the price paid by the buyers to the peasant farmer has not changed at all.

Minor Exports. The export of valuable woods other than teak, including box, ebony, sapan and rose-wood,

once so much sought after in Siam, has not only not increased for many years, but has declined slightly in quantity, though, owing to post-war conditions, the value in 1920, about £50,000, was higher than ever before. A fairly considerable trade in the cheaper sorts of timber has, however, arisen and bids fair to assume considerable proportions in the future. The value of such timber exported annually rose from £7,000 in 1908-9 to over £140,000 in 1919-20.

The amount of fish available for export varies with the conditions which affect the sea-fishing industry. In an average year the value of the export amounts to about £200,000, but it frequently falls very far below that sum, while in bumper years it far exceeds it. The greater part of the export goes to China.

The annual export of pepper from Siam amounts to about 2,000 tons which, before the war valued at about £50,000, was worth over £100,000 in 1919-20. The price of pepper has always been liable to violent fluctuations and as, owing to the high cost of cultivation, the margin of profits to the growers is never very wide, the area devoted to it is now little more than it was in the days when early European merchant adventurers to the Far East fought with each other for it. In 1921-22 pepper, in common with much other produce, felt the prevailing slump acutely and both prices and available quantities declined very much.

The export of hides of all kinds and leather, amounted in 1919-20 to about 18,000 tons, valued at close on half a million sterling. The tanning industry is new in Siam and seems likely to flourish, though, as usual, only Chinese and other foreigners are employed in it.

Though practically every one in Siam consumes imported sugar, there is a small export of the locally-made coarse, under-refined article alluded to above under "Industries." This usually amounts to some 2,500 tons, valued at about £40,000, but in 1919-20

the volume rose to 4,500 tons and the value to close upon £175,000.

There is a fairly big trade in the dyeing of silk cloth which is sent to Bangkok from neighbouring countries to be coloured black by a process and with a material peculiar to the country. The value of dyed silk cloth, re-exported during 1919-20 was £275,000.

In spite of the loss of most of her gem mines, Siam exports a considerable, though fluctuating, quantity of gems. The value of these articles in 1919-20 was £260,000, but it has since fallen to about half that figure.

Stick lac, which is both collected in the forests and cultivated in Northern Siam, is exported in some quantity whenever the market justifies the business. At other times it is retained in stock by the merchants, sometimes for several years on end. 1921-2 was a good year and some 1,500 tons were exported, valued at £200,000 or nearly £140 per ton.

Sundry agricultural produce such as tobacco, cardamums, chillies, copra, pummeloes, sessamum, onions, eggs, pigs, &c., are exported to the value of some £400,000 annually while there is a long export list of minor forest produce including canes, bees-wax, damar, lime, gamboge, gum-benjamin, cutch, tamarinds, ivory and skins, amounting in value to about £50,000. The remainder of the list of exports from Bangkok is made up of miscellaneous articles of which salt, £100,000, and birds'-nests, £40,000, are amongst the most important.

IMPORTS OF BANGKOK.

In the days when the sea-borne trade of Siam was chiefly in the hands of Chinese, a fleet of junks arrived annually, bringing silks, cotton cloth, tobacco, tea, refined sugar, crockery and notions of all kinds, and the merchants, mooring alongside each other, spread

their wares in booths on the awning-covered decks and converted their ships into a large floating bazaar, whither the beauty and fashion of the city repaired by water and passed long hours in shopping and examining the novelties of the season. But this custom has long since passed away; the Chinese tea, silk and gim-cracks which are still imported, are consigned to the shops of Sam Peng, the Chinese quarter, and the waters of the port are given over to steamers, lighters, and cargo-boats, while the import warehouses are filled with goods more consistent with the needs of a progressive and civilised community. First and foremost among imports are cotton goods of various kinds, the value of which may be placed at about £2,500,000 a year, which come chiefly from Great Britain and Bombay and have now to a great extent replaced home-made cotton clothing. Silk goods to the value of £570,000 are brought from China, Japan, Bombay, and to a small extent from Europe. Imports of canned provisions and other food stuffs, £910,000, are about equally divided between China on the one hand and the rest of the world on the other. Metals and machinery to the value of £1,200,000 are imported, chiefly from England. Petroleum oil and products, from America and Sumatra (Dutch), are annually consumed in the country to the value of £400,000. Of gunnies or canvas sacks for the packing of rice, £500,000 worth are imported, chiefly from India. Manufactured sugar and molasses to the value of over £850,000 are imported yearly. The manufactured sugar is practically all recorded as coming from Singapore but is, in fact, the produce of the Dutch Indies transhipped into Bangkok steamers at the British port. The import of molasses is mostly direct from Java in Dutch vessels. The amount of sugar now imported from China is quite insignificant.

Foreign liquor includes samshu, or rice-spirit, from China, wines from France and Italy, brandy from

France, whisky from the British Isles and beer from Japan, Denmark and England. The general impatience with the restraints of religion and the consequent moral slackness, that have followed the recent development of the Siamese in the direction of European customs and modes of thought, have unfortunately permitted the growth of a taste for intoxicating drink that has spread to all classes with disquieting rapidity. To meet and encourage this taste, various brands of the most horrible firewater labelled "Finest French Brandy," "Best Scotch Whisky," and what not, were introduced from Germany, where they were concocted, and sold all over the country at the modest price of eightpence or so the bottle. The war put an end to this trade so far as Germany was concerned but, as spirits of the same quality and general appearance are still to be found in all Chinese liquor shops, it is to be presumed that other countries have not been above taking the place of the vanished Teuton in this lucrative business. The average value of beer, wine and spirits imported annually is about £200,000, more than half of which is on account of samshu. The import, manufacture and sale of intoxicants was at one time a farmed monopoly but, since 1909, the state has controlled the excise directly. It is to be noted that the quantity of imported intoxicants is small as compared with that of locally-manufactured spirit. Also that the excise revenues were doubled when the farm was abolished and have increased by another thirty per cent. since then.

Some 1,500 chests of opium are imported annually at an average total cost of about £370,000, and the drug is prepared for sale and consumption by a State Department at a cost of about £80,000, the revenue from this activity amounting to about two million sterling a year. The great disparity between the import and retail prices of opium lends to the business of opium smuggling a fascination that few can resist,

the results of which are frequent prosecutions in which persons of almost every nationality are at different times involved.

Chemicals, soaps, drugs and perfumery imported, represent about £350,000 in value; hardware, cutlery, etc., £260,000; cane and bamboo manufactures (mostly from Hongkong), £150,000; and tobacco in all its forms, £261,000. The last is a big increase on the figures of former years, due to the activities of the British American Tobacco Company and its Chinese imitators, who have not only displaced locally-grown tobacco in the estimation of many, but have created a great army of devotees of the cigarette at the expense of the messy, but perhaps less harmful, betelnut.

The average annual value of bullion, coin and gold leaf imported in the five years ending 1919-20, is £620,000. Other imports such as paper, cement, furniture, jewellery, leather goods, oils and paint, rope and sundries make up together about £850,000.

Before the great war about 75 per cent. of the imports of the port of Bangkok came from various parts of the British Empire, but as some of the cargo for Siam from Europe and from America and Japan was (and still is) transhipped at Singapore and Hongkong, a certain amount of produce from other countries must be included in this big percentage. Goods from Great Britain direct were about one-sixth of the whole imports.

In spite of the violent trade dislocation caused by the war and the temporary conversion of the British Empire from a trading to a fighting machine, the contributions of England and her Empire to the imports of Siam in 1921 were practically in the same proportion to the whole as before 1914; so transient were the effects of the effort made by Japan to capture the Siam market while the attention of Europe was diverted.

In the almost complete absence of local manufacturers, the Siamese nation depends altogether upon

imported goods for the supplying of its wants other than the plainest food necessities of life. In the village market-places throughout the kingdom, the trade marks of Manchester and Bombay cotton-sellers, the familiar legends on the tins of English-made biscuits, and Norwegian or Swiss milk, and the flash advertisements of rival firms of cigarette sellers constantly meet the eye. The peasant goes clad in English or Indian calico, wears on his head a cheap Japanese hat of the coarsest possible felt, or a still cheaper Chinese production in straw, makes his tea in a beautiful foreign, blue or pink enamelled iron teapot and pours it into a thick, white stoneware cup with saucer to match, gilded round the edges and embellished with what he takes to be words of powerful foreign magic, though these are in fact no more than the invocation "Forget me not," or the dedication "For a good child." When the hillman turns out the haversack which serves him for a pocket, it will probably be found to contain, besides the betel-nut, the chewing-cutch and the inevitable hair-pulling tweezers that are indispensable adjuncts of every outfit, a box of Japanese or Chinese matches, a crumpled packet of 'Cycle' or 'Eagle' cigarettes, a little Japanese tin box with a grossly distorting mirror in the lid, and perhaps a Yankee imitation of a steel pocket-knife.

COMMERCE OF SOUTHERN SIAM.

Twenty-five years ago the total trade of Siamese ports other than Bangkok had never in all probability exceeded £800,000 in annual value, including tin exports. The west coast ports of Trang (now Kan Tang), Puket, Palean, etc., have had trade relations with Penang ever since the founding of that settlement, but the administration of these districts was of old consistently neglected by the central government of Siam and left entirely in the hands, either of local

dignitaries, or of courtiers appointed from Bangkok in order that they might have opportunities of enriching themselves as quickly as possible. These individuals did their best to suppress all trade which was not to their own immediate and peculiar advantage, and the resources of the country were therefore closed to all but their own creatures. Nevertheless, and in spite of the absence of all administrative encouragement and of the presence of swarms of subordinate officials of an astounding rapacity, a sort of trade did manage to exist, carried on almost entirely in sailing vessels owned by Chinese merchants, though its volume was subject to violent fluctuations, at times amounting to complete temporary extinction. Towards the end of the nineteenth century, however, even these distant provinces began to feel the effect of the reforms which were being organised by the central government in Bangkok. The ups and downs of trade due to official corruption or caprice became less disturbing, and in time were replaced by a slow but steady upward trend. As prospects improved, Europeans became interested in the commerce, and a large part of its bulk was diverted from the old sailing vessels to steamers of sorts. The exports, which consist of tin, pepper, rice, live stock, and a little copra, reached the fairly substantial figure of one million sterling about the year 1907; imports, consisting of cotton goods, silks, provisions, opium and rice (to Tongka) totalling at the same period, about £650,000.

The growth of commerce on the east coast is even more recent than on the west. Twenty years ago it consisted of nothing but a little pepper, betel-nut, copra and dried fish, small quantities of which were carried to Singapore in two or three ancient and dilapidated steamers owned by Chinese, and in a number of small sailing vessels, and were there exchanged for cotton goods and sundries. In 1898, the Government, then beginning to administer the east

coast districts, found it necessary to secure communications with the capital, and to that end subsidised a suitable steamer to run regularly up and down between Bangkok and Singapore, calling at the principal settlements on the coast. This service for a long time failed to attract attention, but by perseverance the owners at last secured a footing and began to divert trade from the sailing vessels. In time the new facilities thus made available caused the volume of trade to take an upward turn which became a rapid increase when another ship was put on. The subsidised vessels soon grew into a fleet and several small steamers from Singapore came to take a share in the growing commerce. Rice and paddy, live-stock, tin and timber were added to the list of merchandise. Increasing wealth brought a demand for more imports and, by 1907, the Siamese subsidised fleet of seven well-found new steamers, with several outside vessels, were carrying, between them, exports and imports exceeding £1,000,000 in annual value, from and to the east coast ports.

Since those days the resources of both the west and east coast districts have been considerably further developed and latterly an additional means of expansion has been provided by the peninsular railway system and, though it cannot yet be said that the serious exploitation of this magnificent country is more than just beginning, the total value of the trade of Southern Siam in 1921-2 amounted to about £3,500,000 exports and £1,600,000 imports. The principal exports are tin, fish and cattle, and the chief imports are food, textiles, machinery for mining and tobacco.

OVERLAND TRADE.

The overland trade of Siam with foreign countries is small and increases very slowly or not at all. It is carried on with Burma on the east and with the British

Shan States and French Territory on the north. The present existing good relations with France notwithstanding, there is very little trade across the Eastern frontier, though this state of things may be changed when the railways now in progress towards French territory are completed. The total value of the overland trade, both exports and imports, amounts to some £600,000 yearly, one of the principal exports being teak, of which many thousands of logs extracted annually from the Siamese forests in the Salwin river drainage area, are floated down to Moulmein in Burma, where the Siamese Government maintains a timber station. The other exports are livestock, including elephants, and silk manufactures.

The imports overland are almost entirely European goods brought from Burma for sale in Northern Siam. Most of the import trade is in the hands of regular merchants having houses at Chieng Mai or some other centre, but a good deal is also done by gangs of Shan and Burmese pedlars who perambulate the country from end to end, carrying packs of cotton goods and the usual hawker's assortment of odds and ends, replenishing their stock from time to time at Moulmein or Rangoon. A few Chinese mule caravans find their way as far south as Siam, passing through the French provinces of Sipsong Panna and Muang Sing. They bring with them silks and brocade, furs, copper pots, dried persimmons, walnuts, jade ornaments, and Chinese notions of various sorts. At one time they also imported a certain amount of wild rubber collected from the hill tribes with whom they had been in contact *en route*, and this they disposed of to the merchants of Chieng Mai; but trade in this article is now dead, the commodity being no longer worth the cost of carriage. A few years ago, when the Indian rupee was the ordinary currency in Northern Siam, there was a considerable import and export of treasure between Chieng Mai and Burma, but of late the extension of the

legitimate coinage of the country has brought the traffic within measurable distance of extinction. It is probable that by the extension of the Siamese northern railway recently completed to Chieng Mai, the overland foreign trade of the country will be rather diminished than increased for, though some exports such as that of teak will continue, the wants of the people of the interior, so far as European and Chinese goods are concerned, will be even more cheaply and speedily supplied from Bangkok.

CUSTOMS (REVENUE).

One of the principal obstacles encountered by Europeans trading with Siam in days before the existence of treaties, was the excessive delay caused by procrastinations of the officers charged with the control of shipping and the collection of customs. It was apparently the rule to prevent a vessel from unloading, not only until after the legalised customs dues had been paid, but until as much of the cargo had been given up in illegal fees and in bribery as could possibly be extorted. Even the most subordinate officers and attendants had to be well considered before the unhappy merchant was permitted to dispose of his wares. Bowring records the saying of a witty French priest that "ships trading to Bangkok should bring three cargoes, one of presents for those in high places, one for bribes to the customs officers and one for purposes of trade." This peculiar state of affairs came to an end in the reign of King Mongkut who, as has already been intimated, showed as much encouragement to European merchants as his predecessor had done the reverse. The treaties made in this reign secured the establishment of a properly organised Customs Department and the reasonable treatment of merchant ships of every nationality, and fixed the import and export duties at rates either *ad valorem* or

commensurable with the then value of the goods concerned.

More than fifty years have elapsed since the export and import duties were fixed by treaty, and the incidence of the rates, which at that time appeared fair and equitable, has naturally altered considerably with the changes which time has wrought in the values of commodities and in the relative importance of the customs and the other sources of revenue. The alteration has all been to the disadvantage of the State and to the benefit of the merchant, and had the rates not been so fixed by treaty, there can be no doubt but that the Government would have rearranged them long ere now, and that rightly, in order to maintain that relation to surrounding conditions and values which was originally aimed at.

Only by revision of the treaties, however, can such rearrangement be made, and revision of the treaties in this respect has not been consented to, so that the Government, in the face of a regularly rising value of all exports and imports has had, for many years, to be content with customs dues of constantly decreasing proportion both to the value of the trade and to the total revenue of the kingdom. If the case of rice alone be considered it will be found that the price of the article has risen so much during the last sixty years that if the export duty, originally fixed at four ticals per *kwien* (or about 8 per cent. *ad valorem*), had been increased to preserve a constant *ad valorem* incidence, the customs revenue now available from that article would be about £900,000 a year instead of the actual £260,000 ! The fixed tariff allows a duty on all taxable imports of 3 per cent. *ad valorem*, and this, with the scheduled export duties, results in a total customs revenue of about £1,000,000 a year, or rather less than one-eighth of the revenue of the State. If it be remembered that in Great Britain, a hitherto so-called Free Trade country, the customs produce more than a fifth

of the total revenue, the unduly small proportion of the customs of Siam to her total income is at once apparent. By the terms of the latest French, British, Danish and American treaties, the former provisions regarding customs duties and general taxation have all been cancelled so far as the subjects of those Powers are concerned. It may therefore be that before very long, arrangements will be made with the remaining nations that at last will allow the Government to effect such fiscal reorganisation as shall provide an income from customs in fair proportion to the wealth of the State, and so justify the abolition of some existing sources of revenue which are out of place in a progressive administration, and which press unduly upon the people.

The collection of revenue by the octroi, or Inland Transit Dues, system is one of the most ancient forms of taxation in Siam. It still flourishes to-day and the waterways, roadways and railways are dotted about with collecting stations where tolls are taken according to a fixed tariff on various articles whenever they are transported beyond the boundaries of the province in which they are produced. These articles include a variety of agricultural products including tobacco, pepper, cotton, sugar, pulse, chillies, onions, pigs, fowls, eggs, etc. Also fish, tallow, birds'-nests, salt, earthenware, lime, timber, bricks, bamboos and many other miscellaneous articles. The tariff is high, there is no minimum of exemption from duty, and every boat, cart, or man-load, and each bunch of vegetables or basket of eggs, is liable for the tax and to inspection, not once only, but at every toll-station it may pass on the way from its place of origin to its destination. The system contributes about £200,000 a year to the total customs revenue, is expensive to collect, acts as a constant deterrent of interior commerce and, in fact, constitutes a thoroughly unsatisfactory form of taxation which it has been the desire of

many statesmen to abolish, but which survives pending an adjustment of the whole Customs question.

The last three kings of Siam have all shown themselves fully alive to the importance, in fact to the necessity, of foreign trade in the development of their country along the line that it must perforce follow to keep in step with general progress and to obtain recognition as one amongst the prosperous and more stable nations of the earth. Since His Majesty's august grandfather removed the barrier presented by the old trade monopolies some seventy years ago, all three in turn have consistently encouraged the European merchant. It may with absolute safety be maintained that without such wise encouragement Siam would still be a very long way from the position she holds to-day, for the Siamese, unaided, could never themselves have developed the latent wealth of their country, and the Chinamen who a hundred years ago were busy exploiting it would to a certainty have done so in such a manner that no benefit could have accrued to the State but only trouble and most likely ultimate disruption.

The following words, spoken by His Majesty King Rama V (Chulalongkorn) at a commercial banquet in 1907, are worthy of preservation as an example of the Royal attitude in this respect; they are:—

“The pioneers of Siamese commerce have in truth been the merchants of foreign countries, owing to intercourse with whom, as we see to our great satisfaction, the spirit of commerce is now at last awakening in our own people. It is highly beneficial to the commerce of our country that the merchants of all nations should meet and trade here, alike to their own advantage and to that of our State. We fully appreciate the great advance of the commerce of Siam and, knowing that there is no more important factor in promoting the material progress and welfare of a country than successful commerce, we have always

had deeply at heart the encouragement of trade within our dominions."

European commerce has provided Siam with public wealth which enables her to play a part in the world. Perhaps some day this same commerce may be the means of increasing also the private wealth of her citizens at present very small, and consequently the creation of a self-respecting class mid-way between the bureaucracy and the peasantry; the one instrument now wanting to enable the Ruler to consolidate and make permanent the prosperous condition to which the August Dynasty of Chakkri has conducted her.

COMMUNICATIONS AND TRANSPORT.

WATERWAYS AND BOATS.

THE physical nature of Central Siam is such that for one or two months of each year almost the whole of it is covered with water, varying in depth from a few inches to eight or ten feet, while the even flatness and low level of this region has caused the rivers which flow across it to divide into innumerable channels and creeks, subject to a strong tidal influence whereby their waters alternate between extreme sluggishness and great rapidity of flow.

The people of this district, having so much water about them, have naturally acquired habits which may rightly be termed aquatic and, in the total absence of roads, the making and maintenance of which, under the conditions here prevailing, would always be matters of much difficulty and expense, have long been accustomed to use the water as their principal means of traffic and communication.

Successive rulers of the country who have given their attention to the development of communications have therefore sought to improve existing waterways and to open new ones rather than to make roads, and there has been created by degrees a very complete system of canals connecting the various rivers and creeks and giving access from the main river in the neighbourhood of the capital, to all parts of the rich, low-lying country to the north, east and west of it.

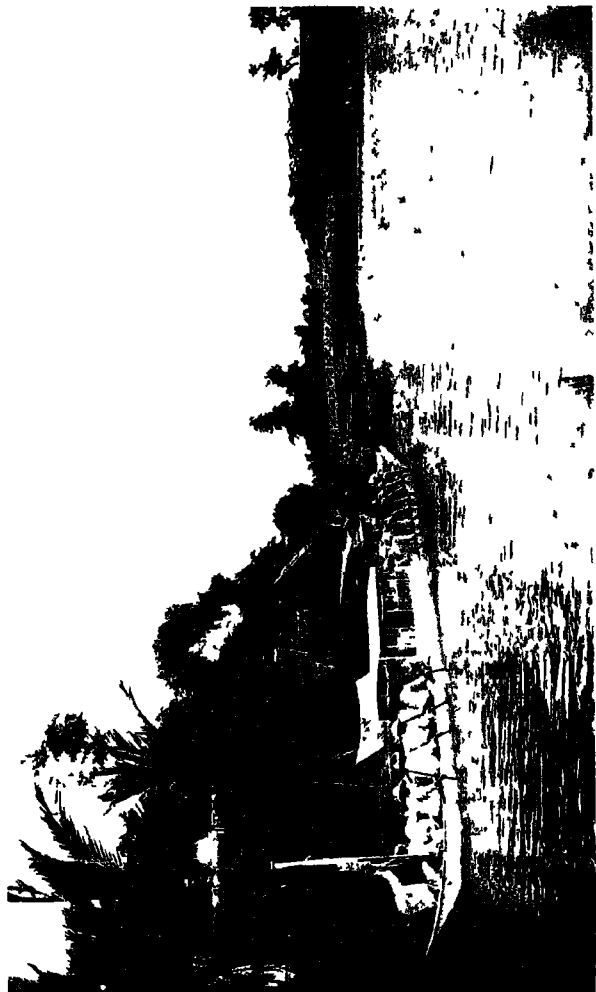
Natural and artificial water-courses thus forming the highways, it follows that the majority of the inhabitants are found living upon the banks of such. The houses cluster beneath the shade of tall bamboos or taller palm-trees at the edges of rivers, creeks and

canals and give something of the impression of long continuous villages stretching almost without interruption from town to town. Behind the houses lie the open rice-lands with usually, at the other side of these, a great expanse of reeds and grass jungle, extending to the horizon or to the line of another water-course, with its complementary cultivated lands and riparian villages. The provincial towns are simply larger clusters of houses standing in serried rows on the banks of a maze of waterways, or floating on pontoons upon the water itself, while in Bangkok, the innumerable canals still exist on which the houses stood in the not very remote days, before streets had been made and before the new city of masonry houses replaced the intricate confusion of thatched huts and wooden mansions which, in the last century, it was the fashion to call the Venice of the East.

The rivers and canals are the arteries of nearly all the traffic of the country and are continually thronged with innumerable boats and vessels of many descriptions. Notwithstanding the recently-constructed railways, eighty per cent. of the produce of the country is carried by water to the markets, while the various journeys and errands which take people abroad upon the roads in the other countries are here all performed in boats. The Siamese children learn to swim almost before they can walk, and the whole population is familiar from earliest youth with the management of boats of all kinds. Indeed it would appear that the physique of the nation has undergone certain modifications in consequence of the large portion of existence which has been passed by countless generations in rowing, paddling, and sitting in boats, for it is a matter of common remark that the shoulders of the Siamese women are squarer and stronger than is usual in other lands, while in both sexes a tendency is noticeable towards development of the arms out of proportion to the somewhat attenuated lower limbs.

Rowing as practised in Europe is not a popular form of boat propulsion in Siam, and is only practised in the *rua nua* or 'boats of the north' which are rowed down stream and poled up. The implements generally used are the paddle, *pai*, and a form of sweep called *cheao*. The paddle is used for small canoes throughout Central Siam, and for boats of all kinds by the Malays of Southern Siam. The Siamese paddle is long and slender and has a square-ended blade, that of the Malay is shorter, has a cross-piece for handle and a wide sharp-pointed blade shaped like an exaggerated spear-head. Both races exhibit a deftness in the use of this implement only to be expected from people a great part of whose lives is passed upon the water. The manœuvring of a Siamese royal barge manned by a hundred paddlers, and the handling of a great Malay canoe by its crew of thirty stalwart fishermen, are both, in their different ways, perfect exhibitions of supple strength and concerted action. The *cheao* is common to Kambodia and Tonquin (as well as to Siam) but is not used in Burma, and nothing quite like it is seen outside Further India, though the crossed sweeps of the common Chinese 'sampan' and the implement of the Venetian gondolier are other variations of the same idea. It is a long, flexible sweep with a cross-piece at the handle-end, and its fulcrum is a stout stanchion rising some eighteen inches above the edge of the boat, to which it is attached by a figure-of-eight grommet of cotton twist. The operator stands erect in the boat facing the bow and works the sweep with a long fishing stroke ending with a jerk. A single sweep used for some boats of the smaller and lighter kind gives a most powerful impetus and, in the hands of an expert, becomes also a steering apparatus of peculiar accuracy.

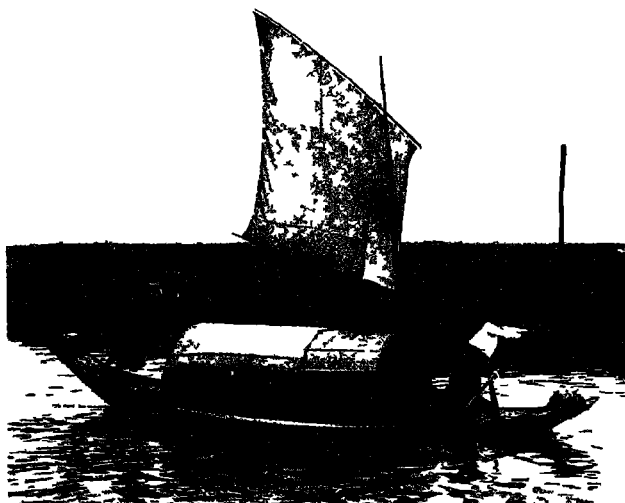
There are few people in Siam who do not understand and practise the art of sailing in some form or another, for, though the days of the old square-rigged merchant



RAJA'S BOAT ON THE PAILANI RIVER



A TUA TADIN RICE BOAT



THE SMALLEST KIND OF HOUSE-BOAT USED IN SIAM

ships have long passed away and the open seas of China and India no longer know the Siamese sailor, the coasting trade in the Gulf, the fishing industry and travelling upon inland waters, give ample opportunities for the exercise of this accomplishment. Indeed the tight little vessels of one sort or another, which run in and out of all the rivers of Siam and brave the treacherous winds of the Gulf, breed a sailor quite as skilful and as daring as may be found elsewhere.

Over and above the people who, living in houses at the water's edge, go about their daily avocations on the water, a considerable part of the population lives altogether in boats. In some of the larger canals of Bangkok, large covered boats of good capacity are always to be seen, moored close together in serried rows, in each of which the owner, with his wife and family, lives permanently or for long periods, and on board of which cooking and other ordinary household occupations are conducted in full view of the passer-by. These are for the most part rice-boats from the interior which, having discharged a cargo at some mill, are awaiting an opportunity to return upstream, possibly with a load of merchandise for sale to the country folk. Others which are furnished as shops, the interior being fitted with pigeon-holes for the reception of rolls of cloth, skeins of yarn, hardware and all manner of imported goods, have come into the metropolis to restock. Others again, may be up from the coast with cargoes of fish, of firewood obtained from the swamps along the shore, of *chahk* (nipah roofing-thatch) or of salt. These boats are of all sizes and of many distinct types. The most common perhaps is the *rua kao* or 'rice-boat,' a bulky, double-ended vessel, broad of beam and deep of draught, strongly built of huge planks of teak or *mai takhien*, and covered in amidships with a neat dome-shaped structure of plaited bamboo strips, caulked and varnished and made quite weather-proof. The bow and the stern are

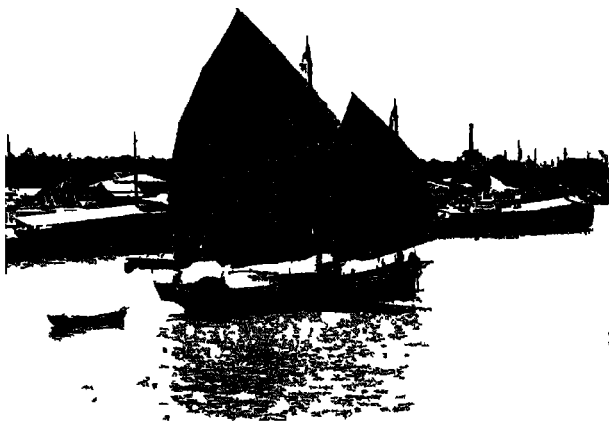
decked and open to the air but have removable coverings which can be drawn over them at will. A foot-board skirts the sides, connecting the fore and aft parts and providing a foot-hold for the poling which is necessary in some waters. The boats are coated with deep red-brown varnish, the decks are highly polished from the friction of bare feet and from being continually sat upon, and the whole effect is one of neatness and cleanliness. The elaborate carving and other ornament with which the rice-boats of Burma are embellished is almost entirely absent. The boats have a single removable mast forward of the covered waist, two or more stanchions on which long sweeps are worked, and are steered by a rudder hanging upon hinges. The *rua pet* is a boat somewhat similar to the *rua kao* but longer, of less beam and altogether more graceful. It is very commonly used on the rivers and is also built for sea-going. The *rua nua* is of altogether different construction. Built for traffic on the northern rivers where the current is rapid and where rocks and shallows are frequent, it is longer and of much less beam than the others and has a draught of only a few inches. The bow is low and only slightly turned up, while the stern is short and stumpy or curves up into a great flat tail, the last part of which is perpendicular. Amidships it is closed in like the *rua kao* and the afterpart is also enclosed with a roof and walls and makes a room in which the steersman sits and where his family usually lives. The forepart, which is narrow, is fitted with stanchions for the short oars with which the boat is rowed down stream and is used, together with the broad, side foot-boards, as the walk of the crew when poling up stream. Sweeps and masts are absent and steering is effected by means of a long broad-bladed oar passed through a hole in the after-room, and projecting past the upturned tail and far out astern.

The *rua chalom* comes from the coast, where it is considered one of the best boats for sea-fishing. It is a double-ender with very upright bow and stern-post, high weather-board, usually decked in fore and aft, and of good beam. It is sometimes covered in amidships with the oval roof of matting common to other boats, but this is not always the case. It is propelled by four sweeps and carries a removable mast and a large square-sail with which it makes astonishingly good sailing, and is peculiar in having two detachable rudders, one on each side of the stern-post, only that one which is on the same side as the wind being used, the other being carried cocked up on end above the stern.

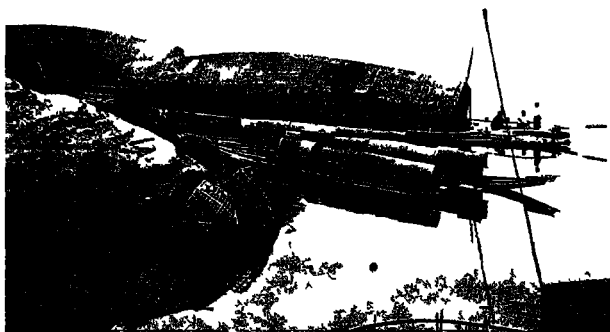
There is always a multitude of queer-looking sailing craft anchored in the main river in the reach immediately above that which forms the Port at Bangkok. Here are Malay schooners, Chinese junks, a curious two-masted boat called *rua yayah* (in Malay *penjajap*), and big sea-going *rua pet*. The schooners are graceful vessels built on European lines, with masts well raked back and carrying the sails common everywhere to boats of this class. The junks are of the usual build of their type, rigged with a mainmast set amidships and a foremast planted right in the bows and raked far forward, and carrying two huge ribbed square-sails. The *rua yayah* are boats of slender build, with the stern projecting over and behind the rudder out of all proportion to the vessel, and carrying a deck-house in which the crew eat and sleep. A wide staging which projects on either side of the bow of these boats gives the foredeck a square shape. They are junk-rigged. The *rua pet* also carry main and fore-masts but have the mainsail well dipped and very high peaked, and the foresail very small and fulfilling no more than the object for which the foresails were apparently originally intended, that is steadying the ship and assisting the steering. Further down the

river is the anchorage of the wooden sailing lighters or lorchas, once a striking feature of the Port of Bangkok but now being gradually supplanted by steam lighters built of steel. The wooden lighters are cumbersome, tub-shaped contrivances of about 200 tons displacement, junk-rigged and manned exclusively by Chinamen. Their sailing is singularly haphazard and erratic, they habitually ignore all the rules of the Port; and the masters of the steamers frequenting Bangkok would gladly see the last of them consigned to the shipbreaker.

In and out among the larger craft, a host of small boats comprising many types is constantly on the move. Almost before the dawn, monks appear paddling tiny canoes from house to house and from boat to boat, with the begging-bowl deposited before them ready to receive the alms of merit-makers. As the sun rises above the morning mists, the boats of the market-gardeners put forth 'cheaoed' by two or four women and carrying a heap of fruit and vegetables in the waist. About the same time, in Bangkok and other towns not far from the sea, the *rua chalom* of the fishermen appear, sailing like a flock of birds when the wind is good, and when not, plunging along to the sweep-strokes of four sturdy oarsmen. Sellers of pork, shell-fish, sweetmeats, and hot coffee, turn out in their little canoes and go threading in and out of the throng, calling their wares. Licensed *rua chang*, or hire-boats, swing along on their single long sweep, manœuvred with surprising skill by the boatman standing on the raised stern. These last make their profits chiefly by short journeys, ferrying passengers over the river or carrying women to and from the markets where the day's provisions are bought, and are always to be found clustering round the public landing stages where their owners tout for fares or engage, with much clamour, in furious games of pitch-and-toss. The private *rua cheao* of the upper classes are a feature of every town



A TORCHA OR CARGO BOAT BANGKOK



BOATS ON THE MEKONG RIVER.

and in Bangkok are very numerous. They have a little house amidships in which the passengers sit, and are propelled by two or four men usually dressed in neat sailor costume. Many of them are highly ornamented and upholstered and have windows fitted with curtains.

Though Bangkok is now a city of bridges and streets, there are many houses of the well-to-do opening direct upon the canals or the rivers, whence they are approached by dainty landing stages. The occupants of these still use the *rua cheao* which to some extent holds its own against carriages and motor cars as a means of getting about. In the provincial towns of Central Siam they are still the only conveyance of the upper classes. The house-boat, known to the Siamese as *rua pic-nic* or 'Picnic-Boat,' is an exaggerated *rua cheao*, the house amidships fitted with sleeping accommodation, and the fore and aft decks roofed with awnings. It is used for long journeys, but, though the acme of comfort for travelling, is heavy and unmanageable unless towed by a steam or motor launch. The popularity of motor launches has been remarked upon elsewhere. The waters of Bangkok are daily ploughed by many hundreds of them, every business firm and not a few private individuals maintaining one or more. The launches of the Royal Navy number over a hundred, and several Inland Transport companies supply daily services between the capital and many of the provincial towns.

Towing on the river was an immensely profitable business before competition cut down prices, and even now it is still remunerative. Every morning powerful tugs depart upstream from Bangkok, towing empty rice-boats and other craft, often to the number of fifty or more on one rope, and, moving at the rate of some four miles an hour, ascend the main river for seventy or eighty miles, dropping at each canal entrance a group of boats which, hoisting sail, are soon spread out in a line of white wings, gliding across the flat

landscape towards the more distant fields of the rice growers. Every evening similar half-mile-long trains arrive from up country but the boats composing these are all loaded down to the gunwale with rice. All vessels, whether inland or sea-going, which frequent Bangkok, are registered there, and the number thus enumerated at present exceeds 200,000.

The boats of the inland waters and the coasts of Southern Siam differ in many respects from those of the central districts. The rice-boat and the *rua pet* are replaced in the rivers by the craft called in Malay *prahu daud*, and *prahu kepala belalang*, shallow-draft, broad-bottomed boats, with houses amidships constructed of plain plank walls and thatched roof, and having the floor below water-level. The former has a broad square deck carried out far beyond the bow, and tilted high into the air to form a steep inclined plane down which the boatmen walk when poling. The latter is without the inclined poling deck, has a sharp prow somewhat resembling the head of the grasshopper, from which the boat takes its name, and is usually paddled. The *prahu daud* has a carrying capacity of from two to ten tons of paddy, and the 'grasshopper-head' averages a good deal smaller. The *rua chalom* is used on the coast as far south as Bandon and the sea-going *rua pet* as far as Sôngkla. Their equivalents further south in the Siamese Malay provinces are the *rua ya-yap* already mentioned, the *payong*, *kolek* of two kinds, and *sagor*. The *payong* is the original *prahu* of the Malay pirates, the blood-stained craft of writers of fiction for boys, gliding with its crew of desperate savages over waters fitfully lit by the lurid glare from burning ships, and chased and captured in his dreams by every youthful reader though, in fact, it has long ago been reduced to the humble rôle of fishing or cargo boat. The *kolek*, an open canoe with upright stem and stern and long straight gunwale, is the ordinary seining boat of the

east coast of Southern Siam. The *kolek linchong* or 'water-lily canoe,' is one of the most graceful vessels in the world; its keel is a perfect curve rising high out of the water into tapering points fore and aft, thus giving the craft the appearance of a crescent moon resting lightly on the water. It is used chiefly for line and small net-fishing and, with its lugsail and foresail supported on the most slender of masts, is a very fast sailer and a good sea-boat. The *sagor* on the contrary is a singularly ungraceful and clumsy-looking craft, consisting of straight dug-out hull with a high built-up free-board, cut off square at the bow and stern.

In his well-known work *Five Years in Siam and elsewhere*, Warrington Smyth has analysed, with the sympathy and insight of an expert, the virtues and failings, the achievements and shortcomings of the sailors of Siam, and has described with the pen of an enthusiast the build, rig, and qualities generally of the vessels in which the water traffic of the country is carried on.

SHIPPING LINES.

The twenty miles or so of the river Menam Chao Phaya, which separate the port of Bangkok from the sea, form an excellent broad and deep water-way for shipping, but a well-defined bar at the river-mouth forbids the entrance of vessels of more than twelve and a half feet draught. Proposals for deepening the channels through the bar have frequently been placed before the Government, but hitherto none have been adopted, and meanwhile ships frequenting the port usually discharge a part of their cargo in the roads of Sichang, formed by an island group a few miles south-east by south of the river mouth, and on leaving take up the greater part of their fresh cargo there. It is for this reason that the fleet of Bangkok lighters exists, and it seems possible that the profits of the

lightering business may be in a measure responsible for the non-dredging of the bar. There are two channels by which vessels of twelve and a half feet draught can cross at high tide, the western of which is the more generally used. This would appear to have deepened by some eighteen inches during the last hundred years, as the records of mariners at the beginning of the nineteenth century show that ships of eleven feet draught then had great difficulty in warping over the bar even with the tide at its best. The fairway is marked by three lightships which show red lights at night. A pilot brig is anchored just outside the bar and the passage, though tortuous, is fairly constant and is buoyed. As a consequence of the presence of the bar, the steamers plying to and from Bangkok are small, and many of them have been specially constructed with wide beam and flat bottom for the negotiation of this obstacle. Ships of more than 2,000 tons are seldom seen in the port, the few large vessels which annually take rice direct to Europe loading the whole of their cargo in the roads outside the bar.

The regular shipping is made up of vessels of the Straits Steamship Co., Ltd., of Singapore, which run regularly between Bangkok and Singapore; a branch of the China Navigation Co., Ltd., of Hongkong, maintaining a regular service with that place; and the Siam Steam Navigation Co., Ltd., of Bangkok, engaged in the coast trade round the Gulf and down the east side of the peninsula to Singapore. Besides these, the British India Steam Navigation Co., the French Messageries Maritimes, the Nippon Yusen Kaisha and the Danish East Asiatic Co. all have offices in Bangkok and maintain more or less regular but infrequent communication with Singapore, Saigon, Japan and Europe direct. Other ships, chiefly British and Norwegian, visit Bangkok from time to time. Since 1914, when the old German ships that provided the regular services disappeared, the companies that

supplanted them have built many new vessels especially for the Bangkok run, with the result that the shipping, both as regards freight and passenger accommodation, is much better than it was before the war. The wharfage facilities of the port have also been considerably improved, the old ramshackle German landings having been pulled down while wharves and warehouses replete with all modern conveniences have been, or are being, constructed in the interests of the more important new companies.

The carrying trade on the west side of the peninsula is attended to by the Eastern Shipping Co., Ltd., of Penang, and the Straits Steamship Co., Ltd., of Singapore. The former, a concern belonging in greater part to the well-known Chinese firm of Koh Guan, has run ships on this coast for many years. So long as it enjoyed a monopoly of the trade, its fleet consisted of a motley assemblage of ancient sea-going launches and battered ocean tramps, including the *Janet Nichol*, sacred to the memory of R. L. Stevenson who made in her one of his South Sea voyages. But when expanding commerce brought the ably-managed and prosperous Straits Steamship Company into competition in these seas, some of the old tubs were replaced by new ships, so that, resulting from the efforts of the rival concerns, the west coast peninsular ports, which include Renong, Tongkah and Kan Tang (late Trang), are now comparatively well served.

ROADS.

Outside the town of Bangkok there are very few made roads anywhere in Siam and none at all in the Central Part. In the capital itself, less than sixty years ago there were no streets, the sole means of communication being by boat, or on elephant-back along tracks which were soft mud when the tide was out and runnels of water when it was in. Of the

hundred odd miles of streets and suburban roads now in existence, most have been made since 1895. During the dry season the open plains that surround Bangkok are everywhere fit for cart traffic and many rough tracks are then in use, while on the higher lands there are well-known, rough but serviceable ways which are practicable all the year round. The overland trade routes from Burma into Siam, notably those between Moulmein and Raheng and between Mergui and the western shores of the Gulf, are of very ancient establishment, the latter, of which the eastern terminus was the city of Petchaburi, miscalled Pipli by foreigners, being the route by which all trade from India and Europe found its way to Siam before the sea route round the peninsula became well known, while the former is the main line which has been followed by the Burma trade from the earliest times down to the present. These are, however, merely jungle tracks, and little has been done to remove their many difficulties beyond the occasional construction of temporary wooden bridges by private makers of merit. In the old days of the 'Pipli' route, elephants were sometimes used as means of transport, and it was on the backs of these animals that, in the seventeenth century A.D., the first French missionaries to Siam made their painful journey from the port of Tenasserim. Most of the merchandise, however, was then, and still is, carried by porters, the best agency for negotiating the innumerable obstacles of the route.

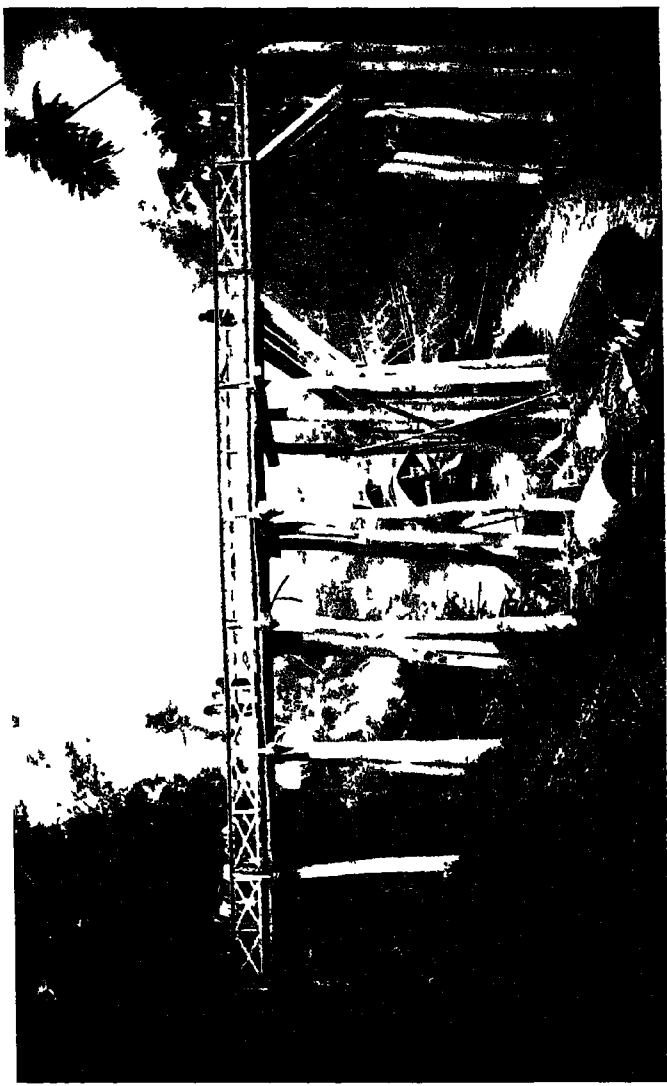
Before the railway had penetrated to Korat on the plateau of Eastern Siam, large numbers of pack bullocks brought out the produce of that section of the country, along well-defined routes mostly converging on the town of Saraburi a few miles east of Ayuthia; many large caravans, of a hundred head or more of cattle, annually making the journey down and returning with loads of cloth and other foreign imports sent to Saraburi by water from Bangkok. Bullock trans-

port is, however, slow and unwieldy and inferior to any other, except, perhaps, elephant, and it is not surprising that the old bullock-paths are now almost deserted in favour of the railway which carries goods in a day from Korat direct to Bangkok. From Korat eastwards and northwards, cart tracks radiate across the sandy uplands, and the principal of these have from time to time been slightly improved by the addition of very temporary bridges. All, however, are unmetalled and are therefore in places quite impassable during the wet season.

Within the last few years the Government has begun to exhibit some activity in the making of roads in the more distant provinces of Northern and Southern Siam, where, for strategic or commercial reasons, it has become desirable to open up remote districts, or where the existing tracks and bridle-paths have been found to be insufficient for the present volume of traffic. But the keepers of the State purse have been slow to realise the importance of roads in places where communications do not exist, and have not only begrudged money for road-making but have withheld it altogether at times. Consequently officers of the interior administration who of their greater wisdom have earnestly desired to make roads, have been compelled to fall back on the *Corvée* laws, by a somewhat free interpretation of which they have justified themselves in calling out the rural population and enjoining every able-bodied man living within a certain distance of the line of a projected road to render unpaid service in the making of the same. In this manner some hundreds of kilometres of roads of a sort have been made during the last twenty years or so, but, in the absence of engineering skill and in the presence of the inertia and incompetence that are still the curse of Siamese petty officialdom, an enormous amount of labour was used to produce results that are ludicrously inadequate.

The continuous extension of railways to which, for reasons commercial, strategic and political, Siam finds herself committed, has lately brought about in the minds of some of her statesmen a better realisation of the necessity for serious consideration of the road question. The general control of all road-making and road-maintaining operations has now been placed in the hands of the Commissioner General of Railways ; the Treasury has been cajoled of funds, inadequate but something to get on with, and a serious attempt is being made to connect with the world those numerous districts at present cut off by the absence of decent communications and left with their resources entirely undeveloped and their people wallowing in slothful ignorance. Following the well-known principles comprised in the art of window-dressing, the Government is devoting more attention to the roads of Southern Siam than to those of the Eastern or Northern Parts, which are less exposed to inspection and criticism from outside. In Southern Siam there are some 1,000 kilometres of roadways connecting the chief towns of the various provinces with their outlying villages. Most of these are unmetalled but bridged, and are fairly serviceable when the weather is dry ; a few are metalled and passable at all times, and a certain proportion are neither metalled nor bridged and are monuments to misguided effort. Probably the best road in the country is that which runs from Sôngkla to the British border at Sadao where it connects with the Kedah road system. By this route the traveller by motor car can reach Penang from Sôngkla in a few hours. In Northern Siam there is one metalled road connecting Chiang Mai with Lampun, and from all the larger villages there radiate a number of tracks which, at first banked up, metalled and bridged, degenerate, usually after the first thirty kilometres or so, into bridle-paths. Beyond these there is at present not much, but signs are abroad that the condition of stagnation is passing

LOOKING DOWN RAILWAY TUNNEL FROM THE MOUNTAINS, 30 MILES INLAND





TRAVELLING IN SOUTHERN SIAM OLD STYLE



TRAVELLING IN SOUTHERN SIAM. NEW STYLE.
(The Bangkok-Penang Mail.)

[Photo: State Railways Dept]

away under the influence of the energetic and persevering Prince of Kampong Pet who at present occupies the position of Commissioner General of Railways.

RAILWAYS.

About the year 1880 the ambitions of France in Further India and her very evident determination to make a strong bid for the trade of the eastern part of the region and of South-west China, created alarm in the breasts of British merchants and caused a certain amount of agitation in favour of securing the trade of the Shan and Lao States, Yunnan and Siam before it should be too late, by means of railways connecting those parts with British Burma and constructed with British capital. Advocates of various routes from Burma to Yunnan arose, and amongst these were Messrs. Holt, S. Hallett and A. R. Colquhoun, who strongly favoured a line from Moulmein following the present trade route to Raheng in Siam, thence running past Lakon Lampang (whence a branch to Chieng Mai could be made), up due north out of Siam, along the Mehkông river and finally through Yunnan and right away into the heart of China. With a view to promoting this route, its advocates explored Northern Siam and embodied the results of their travels in books of much interest and in lectures which they gave before various Geographical and Commercial Bodies in the United Kingdom. Ultimately, however, the merits of their route were voted inferior to those of another which did not enter Siam, and the project to which they had given much unremunerated labour had to be abandoned. Their work had the effect, however, of bringing the importance of railway communications in his dominions prominently before King Rama V of Siam and, in 1887, with the assistance of the Governor of the Straits Settlements, a contract was entered into by His Majesty's Government with a British firm which

resulted in the survey for a line 900 kilometres long, from Bangkok to Chieng Sen on the Mehkông, the northernmost town in the country.

The first railway in Siam was not made, however, in pursuance of any such ambitious project but was, in fact, a modest private undertaking connecting the capital with the village of Pakham, 20 kilometres away and near the mouth of the Menam Chao Phaya. The Pakham Railway Co., Ltd., was organised in 1891 and began work in that year. The line was completed and was opened by the King in 1893. The Company's property consists of a narrow gauge line of light material, termini constructed of timber at Bangkok and Paknam with a few tiny wayside stations intermediate; three locomotives, a dozen passenger carriages, one Royal saloon carriage, two goods vans and two or three open trucks. Most of the rolling stock dates back to the last century. The line runs through perfectly level rice-fields and except for wooden bridges and culverts here and there, cost very little to lay. From the first the railway was highly popular with the country people and, though it has practically no goods traffic, it has proved a financial success the completeness of which the lapse of time has emphasized.

On the completion of the northern survey, the question of construction of State railways fell into abeyance and it was not until necessity arose in another direction that the Government once more bestirred itself in the matter. The action of the French in approaching, and encroaching upon, the eastern frontier of Siam, and the plans which they began to discuss for diverting the trade of Eastern Siam from Bangkok to Saigon, alarmed the Siamese Government, and it was presently decided that the construction of a railway to the eastern provinces to make the frontier accessible in case of military necessity and to retain the trade of that part for Bangkok was a matter of urgent national importance. Tenders were thereupon invited for the

construction of a line from Bangkok to Korat, a distance of 264 kilometres, and a contract was subsequently given to an Englishman with experience of such work gained in Ceylon and in the Malay States. The first sod was cut by His Majesty King Rama V in 1892 and it was hoped that rapid progress would be made with the line. But ill-luck seems to have fastened upon the undertaking at an early stage and it was not until the spring of 1897 that the first section, about 73 kilometres, was opened for traffic. When the construction began, a Royal Railway Department was instituted, the principal duty of which was to control the work of the contractor. The German gentleman who was appointed to direct this department had been an unsuccessful tenderer for the contract, which fact was scarcely likely to conduce to future harmony between the contractor and the Government. It certainly did not do so, for differences arose almost at once and a condition of affairs very shortly supervened which, going from bad to worse, bid fair to ruin the whole enterprise. The unsuccessful German competitor, in his capacity of Director of Railways, criticised and condemned the work of his British rival, possibly with more zeal than tact, while the contractor, impatient of control, more particularly when exercised by this particular individual, hastened to ascribe all delays as well as other more serious shortcomings to undue interference on the part of the Government. At length, in 1896, matters between the Department and the contractor having reached an *impasse*, the Government cancelled the contract, stopped the work and took over the construction, in addition to the direction, of the line. The claims which were at once put forward by the contractor became the subjects of a lengthy arbitration, ultimately decided against the Government. Fortunately, there were amongst the numerous staff which the Director of Railways had engaged, several highly competent engineers in whose hands the interrupted work of the

contractor was speedily put in order and pushed forward, the first section (from Bangkok to Ayuthia) being opened a few months after the change. The heavy work upon the hilly sections beyond was also put in hand without delay, and before the end of 1900 the whole line was in full working order, though by that time the march of events had robbed it of much of its strategic value. Meanwhile, however, the original scheme of a railway to the north had been revived and work had been begun on a 42 kilometres (26 miles) section branching from the Korat line a little above Ayuthia, and carrying railhead to the ancient town of Lopburi some 133 kilometres (70 miles) north of Bangkok. This branch was opened for traffic in 1901. At the same time, events in Southern Siam and the growing need of communications between the provinces on the west of the Menam Chao Phaya and the capital had caused a further development of railway policy, with the result that in 1900 the Government had ordered the construction of a line starting from the west side of the river at Bangkok and running west to Ban Pong on the Mehkông river and thence south, via Rajburi, to Petchaburi, 152 kilometres (94 miles) distant, constituting the first section of a future Peninsular Railway. This work was pushed on rapidly and well, and in 1903 the whole section was completed and opened. Thus eleven years after beginning work, the Siamese State Railways consisted of 462 kilometres (285 miles) of completed lines which, though by no means a great achievement for so long a period, was at least more than a mere beginning, and very considerably more than was prognosticated by the hostile critics of everything Siamese, who had greeted the inception of the railway policy and the early*misadventures which attended its realisation with scepticism and ridicule.

Hitherto the cost of construction of the lines with their complement of buildings and rolling-stock had been defrayed entirely out of revenue, but it was now

felt that, while military and administrative requirements in Northern Siam rendered the extension of the northern line imperative, the growing demands of other Departments of Government could not be neglected, and that the Government having spent 27,000,000 ticals, or about a million and three quarter sterling at current rates of exchange, would be well advised to resort to borrowing for further railway construction. In 1903, therefore, the first foreign loan of Siam was raised consisting of one million pounds, and since that date railway construction has been more rapid than formerly, while more ordinary revenue has been available for other purposes. In 1905 the section Lopburi-Paknampoh, 118 kilometres (73 miles), was added to the Northern Line, and this was followed at the end of 1907 by the further section Paknampoh-Pitsanulok, 140 kilometres (87 miles). This section was opened by King Rama V, who in his speech at the conclusion of the ceremony, enunciated the motive of Siamese railway policy in the following words:—

“The construction of railways has not only the greatest influence upon the development of a country but is also the most striking evidence of that development. . . . By bringing the different parts of a country within close communication the railway renders possible that close and beneficial supervision which is necessary to effective administration. By furnishing rapid and easy means of transportation, it adds materially to the value of the land and its products. . . . The railway wherever it goes carries with it enlightenment and encourages the growth of that national feeling which is so important an element in the welfare of a country. . . . I trust that the work will continue to advance with rapidity, for, as I have already stated, progress in this work means progress in the development of the country and the prosperity of the people which I have so much at heart.”

In 1908, the section Pitsanulok-Bandara, 68 kilometres, was completed.

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metres (42 miles), was opened and thus 333 kilometres (202 miles) were added to the main railways of the country in the five years following 1903 ; while during that same period a great part of the tunnelling, bridging, and other heavy work for the next sections, the heaviest and most expensive part of the whole Northern line, were also put in hand and brought to an advanced stage. Moreover, a third line of Government railway, connecting the eastward and south-eastward provinces with the capital, was taken up during this period, a section of this, Bangkok-Petriu, 63 kilometres (39 miles), being completed and opened for traffic early in 1908. When the final accounts for the traffic on the Northern Railway were made up for the year 1908-9, they showed that the line had reached a point beyond which its extension could not then be expected to pay, by reason partly of the sparseness of the population and partly of the expensive nature of the work required to carry the line through the hilly country at the edge of which it had arrived. It was therefore determined to suspend further construction and to make the terminus for the time being at Den Jaya at the foot of the hills 50 kilometres beyond Utaradit, with a short, westward branch to the ancient city of Sawankalok. These remaining sections were opened by His present Majesty King Rama VI, then Crown Prince, towards the end of 1909.

In the summer of 1909 the Siamese Railway Department signed an agreement with the Government of the British Federated Malay States by which it secured a loan of four million sterling for the purpose of extending the railway from Petchaburi southwards through Southern Siam to link up with the Federated Malay States railway system. The political advantages of this agreement to England were considerable, for by it she obtained a voice in the affairs of the Siam-Malay Peninsula, for which she had been working for several years. Its advantages to Siam were also

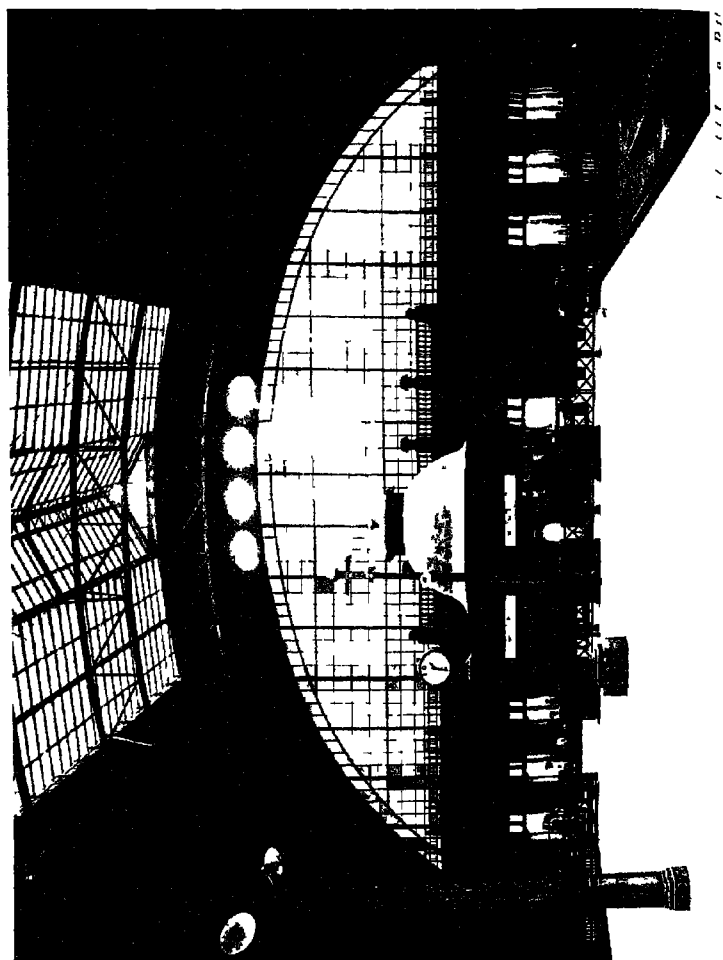


TRANSPORT OF MERCHANDISE TO KORAT, EASTERN SIAM OLD SIXTY



TRANSPORT OF MERCHANDISE TO KORAT, EASTERN SIAM NEW SIXTY

[Photo State Railways Dept.]



manifest, for it ensured the immediate opening up of the fertile regions of Southern Siam which must otherwise have been indefinitely delayed, and it promised to bring the Siamese capital appreciably nearer to the world's great mail and traffic route through the Straits of Malacca. The survey work for this southern extension, over six hundred miles in length, was completed without undue delay and construction began as soon as possible thereafter. The adopted route being within easy reach of the sea at almost every point, it was possible to begin and to carry on construction on several sections simultaneously. Thus under the devoted care of the highly-gifted and long-experienced British engineer who had been selected to control the undertaking, work was pushed on well and rapidly and, in spite of sundry set-backs due to floods of unprecedented magnitude, before the end of 1917 the main line was open to a point 1,017 kilometres (621 miles) from Bangkok, while four branch lines aggregating 201 kilometres (124 miles) connecting with the ports of Nakon Sri Tammarat and Sôngkla on the east coast and Kan Tang on the west, and with the British Malaya Railways on the borders of the State of Kedah, had also been opened for traffic. Subsequently the one section of the main line remaining to link up with the British Malaya System on the borders of Kelantan, 128 kilometres (79 miles), was completed, and the beginning of the year 1922 found the whole railway system of Southern Siam, 1,346 kilometres (824 miles) of metre gauge single line, in full working order with a *wagon-lit* express service conveying passengers from Bangkok to Penang in 36 hours and from Bangkok to Singapore in two days; a system that, besides the incalculable benefit that it has for the country through which it passes, brings the capital of Siam more than a week's journey nearer to Europe than it was by the old all-sea route.

In the beginning of 1912 the Government decided

to push on once more with the Northern Railway, and arrangements were made to carry railhead to Chieng Mai, 223 kilometres (137 miles) from the temporary terminus at Den Jaya. Much of the preliminary work for this part had already been done and although it comprises by far the most difficult country yet encountered by railway constructors in Siam, and includes a 1,360 metre long tunnel at Khun Tan, the line would doubtless have been completed by 1916 had not the war cut off the supply of material from Europe. As it was, the permanent way reached Chieng Mai in 1921 and these difficult and expensive sections were opened for traffic at the end of that year.

Having satisfied the railway requirements of the country to the north and to the south, the Government turned its attention to the east and, in 1921, His Majesty the King was pleased to decree the extension of the Petriu and Korat lines, the former to the village of Aranya Pradésa, commonly called Muang Aran, on the border of the Battambang province, now French territory; and the latter right across Eastern Siam to the town of Ubon not far from the confluence of the Nam Mun and Mekong rivers.

The first of these extensions, 196 kilometres (120 miles) in length, is presumably a political undertaking mainly; for the line will pass for a great part of its length through thinly-inhabited and not very fertile country served already by fairly good water communications. At the frontier it will meet a French highway fit for motor traffic, and destined possibly at some future time to carry a railway line which will place Bangkok in rail communication with Saigon.

The second extension, 310 kilometres (190 miles), doubtless has a political object also but is mainly commercial and administrative. Eastern Siam carries a large though scattered population which, from lack of good communications as well as from other causes, is the most poverty-stricken, benighted and generally

backward part of the inhabitants of the kingdom. Hitherto this section has contributed little to the national welfare and has received nothing at all in the way of social, economic or administrative benefit from the State. It has long been felt in some quarters that in the past the Government has shown a culpable indifference to the condition of this large community, and it is hoped that a railway through the country may be the precursor of a new era when the people shall receive a modicum of education and some slight degree of protection and justice ; encouraging them to develop the resources of their lands and thus in time to become something more than the mere deadweight and encumbrance to the State that their present condition makes them.

Owing to the peculiar circumstances under which the State Railways came to be made, the Northern and Eastern lines have hitherto been all of the 1'435 metre gauge, while the Southern line is metre gauge. The terminus for the former is on the east bank of the Menam Chao Phaya and that for the latter is on the west, and there has so far been no communication between them. The many inconveniences resulting from this very peculiar state of things has of course been apparent from the first, and now that the circumstances that gave rise to it are no longer operative, plans for a unification of the systems have been brought forward and sanctioned. These envisage the building of a great composite steel and ferro-concrete bridge over the Menam Chao Phaya and the conversion of the whole of the broad gauge lines to metre gauge by the laying of an extra rail. In spite of the forebodings of the more conservative, who think that to bridge the sacred river is to insult the gods and thereby risk disaster, building operations were begun in 1922 by a celebrated French firm to whom the construction had been entrusted, and the conversion of the broad gauge lines was also undertaken.

The entire railway outlay of capital, which includes the cost of 124 locomotives, 310 passenger carriages and about 2,100 goods wagons, the present existing rolling-stock, amounted in 1920 to 121 millions of ticals or, at average rates of exchange, about ten millions sterling. The extension and improvements now being carried out will add a further thirty odd millions of ticals, or some three millions sterling, to the sum.

The accounts of the whole service for 1921-2 showed a net profit of rather over four per cent. on the capital invested.

The administration of the State Railways since their inception forms an interesting chapter in the history of the recent development of Siam. The unfortunate collapse of early efforts to construct by contract has already been referred to. The subsequent control of the Department of Railways by German officials is rich in episodes showing the strange mixture of astute cunning and obstinate stupidity that characterised the efforts of Germany to establish a preponderating influence in the Far East. Unable to grasp the Siamese point of view regarding the Government of their own country, or even to realise that such a point of view could, or ought to, exist, the German Director of the Department assumed from the first an autocratic attitude that would brook no interference with his actions on the part of the Government that employed him; which attitude was endorsed and supported by the German Representative at the Court of Bangkok. So far as concerned the organisation of the Department and the business of construction, the Government was content to leave things in his hands, but the control of the financial arrangements involved was a perennial cause of friction which embittered the relations between the State and its employee. It was apparently a fixed German policy that the Siamese railways were to be nursed into a profitable closed market for German

goods of every description, and the Director advanced the theory that all money allotted to railways in the annual financial budget of the Kingdom must be under his absolute control or to be accounted for only to the King in person and not, under any circumstances, to His Majesty's Minister of Finance. He further insisted that the purchase of all material must be left to himself alone, to be conducted by private tender or without tender at all as might seem to him best. The efforts of the ministry of Finance to obtain the barest information as to how the large sums of money annually voted for the railways were being spent, evoked from the Director an outcry of injured honesty, and from the German Representative at Bangkok a whirlwind of indignant protest. Nor did His Imperial German Majesty disdain to remark upon the matter, and that in such a way that the Siamese Government was fain to acquiesce in this unusual situation, until the failure of a Leipzig bank involving the loss of Siamese money which should have been in the Bangkok Treasury, brought matters to an issue that there was no avoiding, and forced the Germans to a reluctant admission of the right of the Government to some control over the disposal of its own money. Even then, however, surrender of the financial control was only partial, while the management of the construction and maintenance of the line and of the Department generally continued to be a close German preserve, other Europeans and Siamese being admitted only to quite minor positions of no responsibility.

The casual-minded Siamese public did not take kindly to the autocratic and punctilious ways of German officialdom and the railway suffered in consequence and was considerably less of a public benefaction than it should have been.

When British Malaya lent the money for the Siamese peninsular railway, it was stipulated that neither construction nor control were to be German, in fact,

that these must be British, and consequently, the Germans being immovable, a second Railway Department had to be constituted under the general control of the Siamese Minister of Public Works (or Communications, as the Ministry was afterwards renamed). The situation thus created was extremely difficult; and it became tragically absurd when the war began and the neutral Minister was called upon to manage his pair of Directors, the divergence of whose views at nearly all points was violently intensified by the feelings natural to them under the circumstances.

When, in due course, Siam came into the war, every German in the Government service, as well as all others in the country, was interned as an enemy, and it became necessary to reorganise the railway administration. The two Departments were thrown into one and placed under the direction of a Commissioner General in the person of General H.R.H. Prince Purajatr of Kambaeng Bejra (Kampeng Pet), a brother of His Majesty the King and a Prince who, to a natural intelligence of the very first order, had added an English education, high engineering qualifications and a brilliant record as a Military Engineer. To the Siamese, British and Italian engineers of the railway service were added several Siamese engineer officers from the Army, and the new Department, relieved of the German incubus and, responding to the call of its energetic leader, went forward at once in a surprising and highly gratifying manner. In the years that followed, the number of Europeans in the service was very gradually reduced, more especially in the higher grades, and by 1922 the total number still employed, exclusive of mechanics, was nineteen, while many young Siamese were studying railway engineering in America and elsewhere in order to become qualified to take the places of this residue in course of time.

The success of the national railways from the pecuniary point of view is not yet absolutely assured

but each day seems to make the ultimate attainment of that much-to-be-desired condition more certain. The lines are carrying a very perceptible and increasing measure of prosperity into more than one formerly desolate and unproductive region, the towns and villages along the routes have increased in size and wealth since they have been connected with the capital, a considerable trade, more especially in livestock, has sprung up which had no previous existence at all, and the management of the service is continually improving and becoming better adapted to the requirements of commerce. For purposes of administration the value of the railways cannot be overrated and, in fact, the present system of rural Government could hardly exist without them. There were at the beginning of 1922, 2,360 kilometres (1,450 miles) of State railway open for traffic and 106 kilometres (65 miles) of private line, the property of three small companies.

The Railway Law, passed in the year B.E. 2464 (1921), is a compendious production dealing with every possible aspect of railway administration; and concerning itself not only with the State Railways but establishing also the degree to which private railways come within the jurisdiction of the Commissioner General of Railways.

PART II.

ART.

THAT the Siamese were at one time skilled in the production of objects of high artistic value is abundantly testified by the innumerable treasures of native workmanship which are stored up in the museums and in the private collections of the wealthier class. That they are so now is not, however, so evident, since it is rarely that artists of any great capacity are met with at the present day, while the results of the labours of such as there are can very seldom compare favourably with the productions of the past. The explanation of this decadence is not far to seek, and is simply that the great influx of European goods, brought about by the commerce of the last few decades, has very nearly killed the art of the country by debauching and perverting the artistic perceptions of the people. Burma, China, and Japan have all suffered much from the same cause, but the characteristic arts of those countries have been saved from utter extinction by the growth of a foreign demand for their productions which has given them fresh impetus, though doubtless along a much lower artistic plane. The world, however, has hitherto shown no interest in the arts of Siam except for the purpose of imitating and supplanting them in the country itself, and thus, with the desires and appreciation of the people turning from them, and without encouragement from outside, they are in danger of extinction.

Another reason which would account for a decline of Art, is to be found in the break-up of the households of the wealthy nobility that has been brought about by recent changes in the manner of life in Siam.

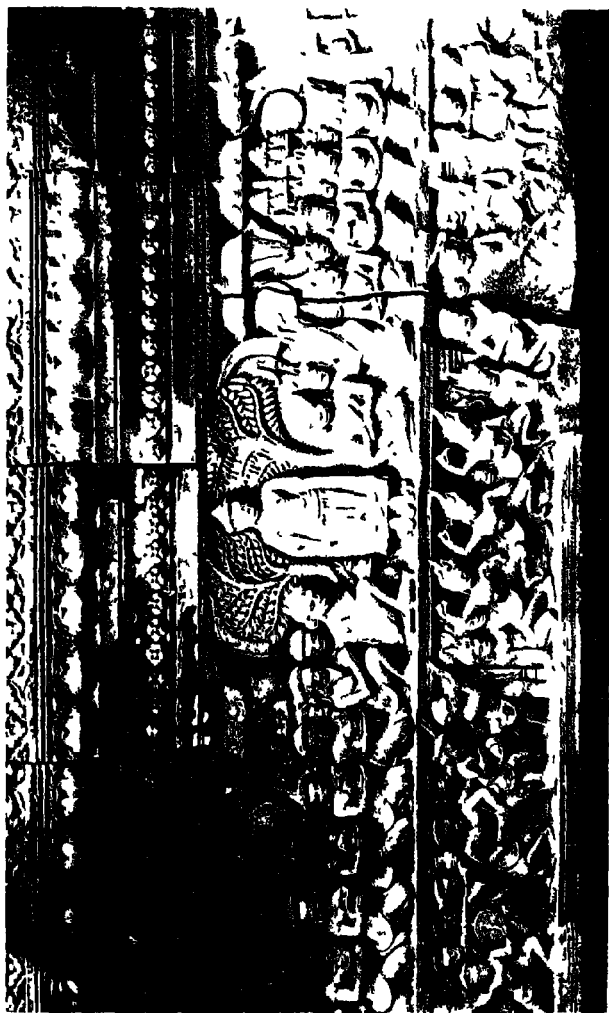
In the days when the position and wealth of a man were gauged by the number of followers he kept about him, each person of rank maintained his own private jewellers, painters, silversmiths, poets, and so forth, and therefore was, in a measure, the patron of a school of art for which recruits were easily found from amongst his household, recruits who strove to uphold the honour of their patron by an excellence of workmanship and a careful preservation of national forms and ideals, for the realisation of which their mode of life gave them ample leisure. This class has now to a great extent disappeared, while many of those whose patronage should properly be used to support native talent have themselves become possessed with the idea that the wretched travesties of foreign art which are foisted upon them by eager tradesmen are eminently desirable possessions, and prefer to spend their money on the acquisition of these latter rather than in the encouragement of the arts which flourished under the care of their forefathers.

Fortunately, however, the case is not absolutely hopeless. There still remain a few determined patrons of the national arts, the most enthusiastic of whom is the King himself, while in all that concerns the embellishments of religion, to which the art of the country has always been largely devoted, the public taste is highly conservative. Moreover there are signs that the Siamese are recovering from the sad condition which led them to believe that all which came from abroad must necessarily be superior to their own productions, and it is possible that the growth of a pronounced national spirit, which is one of the most striking signs of the times, may bring about a renaissance of the arts.

Sculpture. True sculpture, that is the carving of stone, can scarcely be said to exist at all in Siam at the present day, though there is evidence in the ruins of the oldest temples that this art at one time flourished

in the land. Ancient figures of gods, angels, and men, representations of snakes, birds, elephants, and other animals as well as flowers and sacred symbols, carved, some in low, others in high, relief upon ancient walls and monuments of sandstone and laterite, have here and there resisted the ravages of time, and stand to-day in all their wealth of extraordinary minuteness and accuracy of detail as monuments to the genius of the remote ancestors of the Siamese, and as proofs of the extreme antiquity of the sculptor's art and of the peculiar conventions which were formerly, and still are, the chief characteristics of the Siamese artistic imagination. The disuse of stone for religious buildings put an end to sculpture, but in its place there arose a craft of modelling in softer materials such as clay and durable plaster or cement, with which latter substances the brickwork structures that replaced stone were encased ; which craft is still exercised at the present day. Clay models of the human figure, apparently of great antiquity and of almost perfect form and proportion, have been found amongst the ruins of ancient cities, and there are to-day a few artists in Bangkok whose modelled figures of men and beasts are almost equal to those of yore. Plaster mouldings, set hard as granite upon a substructure of brick and in effect resembling stone sculpture, have survived from the twelfth century A.D., and serve as models for the construction and ornamentation of modern temples, though in these latter cases neither the material nor the execution are equal to those of the prototypes.

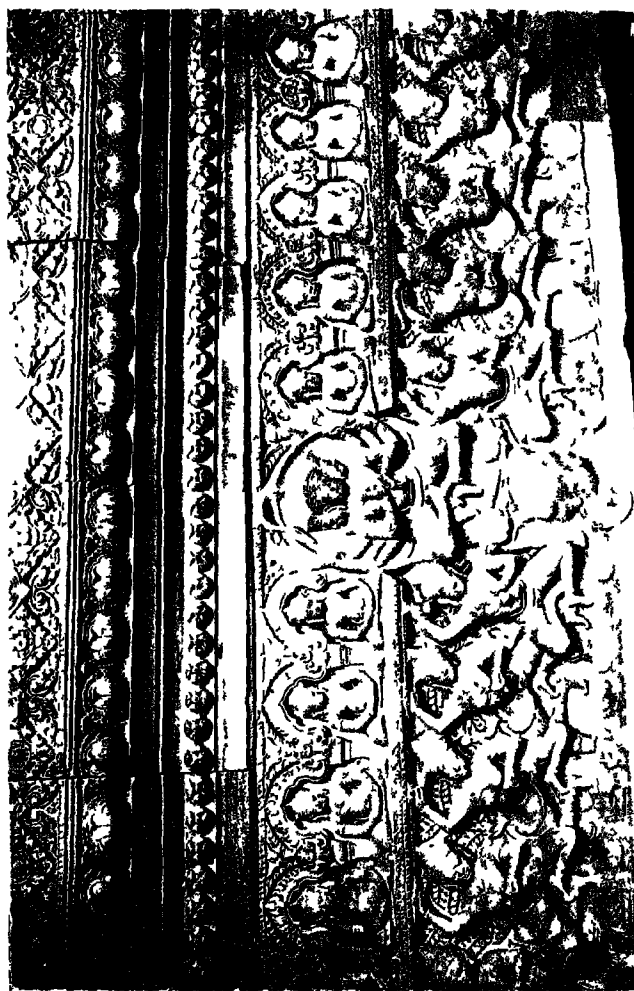
The number of images of the Buddha which have been made in Siam is quite beyond calculation. In every temple, in caves, and in pagodas on the tops of hills, they are to be found not singly but in dozens, sometimes in hundreds. Next to the actual making of a Buddha the most meritorious of actions is to buy one and to place it in a temple or in some prominent



ANCIENT SCULPTURE IN SANDSTONE - RUINS OF PINAI

Subject Adoration of the Buddha

(cont.) p. 150



ANCIENT SCULPTURE IN SANDSTONE. FIGURES OF THE MONARCHS OF THE CHANDRAVAMSI DYNASTY.

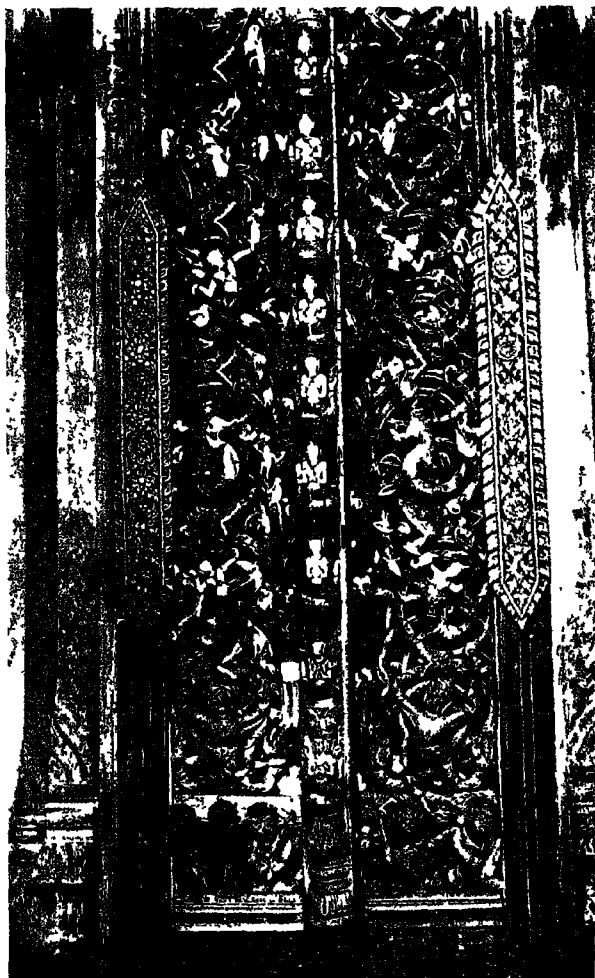
situation where it may catch the eye of man and lead his thoughts to the Teacher and the Law, and for this reason there has been from the earliest times a demand for images which has kept generation after generation of artists busy. In the "Life of the Buddha" the thirty-two corporeal signs of a Buddha are carefully and more than once enumerated; which signs, had they really been present in the Buddha, would, many of them, have marked him out undoubtedly as physically quite unlike any other human being who ever lived on this earth. There is evidence elsewhere, however, that the Teacher began life as a very ordinary-looking Prince, not startlingly different in physique from other princes or, for that matter, from common men. Amongst the signs are these: that the arms and legs are straight and round "like candles," and without appearance of muscular development or of veins; that the back has no depression down the centre but is straight and flat "like a golden plank"; that the neck is smooth and "like a tube"; and that the back of each foot and hand is round "like the back of a tortoise." These signs are faithfully reproduced in all the images, from the most ancient downwards, with the result that the figure is exactly what might be expected from the efforts at sculpture of primitive men without knowledge of anatomy or education in Art; from which it seems probable that the thirty-two signs, or at least some of them, were originally conceived as characteristics of the Buddha from the contemplation of rude images made by inexpert but venerable hands. These images, having acquired a sanctity which it would have been sacrilege to doubt, it was found convenient to pronounce their manifest imperfections as due, not to incompetence of the makers but to a truthful representation of the peculiar physique of a Buddha. Through the centuries the innumerable images of the Buddha have all been made in exact copy of the first crude models, and the Siamese faithfully

adhere to the same elementary form to-day, though their knowledge and skill have long ago enabled them to reproduce secular subjects in much more accurate likeness to the living forms. The vast majority of sacred images represent the Buddha as seated cross-legged, sometimes with one foot hidden and sometimes with the soles of both feet turned up in the lap, the latter an attitude almost impossible of attainment by ordinary mortals. Less often the figure is recumbent with the head resting on one hand, or erect and holding the folds of the garments in each hand or having the hands raised in benediction, or occasionally walking or seated as on a chair.

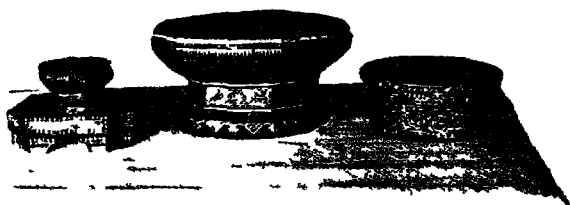
Moulding in stucco is now employed almost solely in works of a religious nature, but in clay modelling many secular subjects are treated. Groups illustrative of the various industries and pastimes, flowers and fruit and animals, are made in large numbers and when coloured are very accurate and life-like.

Metal Casting. The Siamese have long been proficient in the art of casting bronze. Bronze images of the Buddha in faithful accordance with the prescribed form are almost as numerous as those of brick and stucco. They are of all sizes, from the giant figure forty feet high which is still to be seen amongst the ruins of Ayuthia, to the little images of a few inches only which can be bought in bazaars; and of all ages, from the ancient productions of the tenth century or earlier to the very fine specimens from time to time cast under the personal supervision of the King at the present day. Bronze bells have also been made in Siam from time immemorial, while heavy bronze cannon cast in the middle ages and later, some in the shape of dragons, and others heavily ornamented with scroll work, are still preserved in the museums and elsewhere.

Wood-Carving. The Siamese have not achieved great things in the way of wood-carving and in this



DOOR OF A WAT IN CARVED TEAK.



LACQUER AND MOTHER OF PEARL PRIESTS



LACQUER TORTOISE SHELL SILVER IVORY
COVERS FOR PALM LEAF SACRED WRITINGS

respect are far behind the Burmese, with whom carving takes almost first place amongst the arts. When the ancient stone buildings began to be replaced by brick and plaster structures, a good deal of timber was introduced into building, and this led to the use of wood-carving in the ornamentation of gable-ends, of wooden pillars, doorways and so forth. The finest specimens of carving are to be found in the North, the Lao country, where teak timber, which lends itself to such work, has always been much used for building purposes. Even at its best, however, the carving of Siam is not very striking. Floral designs are preferred, figures not being often attempted. Here and there, however, figures of angels and of men and oft-depicted incidents of sacred story, appear on the carved doors, windows and gable-ends of temples, and some of these are of exceedingly good execution, while others, usually the more modern, are crude and grotesque and scarcely to be classed as art productions at all.

Inlaying, Gilding and Lacquer Work include some of the most tasteful products of Siamese art. With such poor material as broken glass and fragments of porcelain set in plaster, very fine general effects are obtained in the ornamentation of Phrachedi, temples and other structures connected with religion. True, such work will not bear minute inspection and has often been condemned as tawdry and as betraying very low and barbarous artistic ideals. Such materials are, however, used only for the embellishment of large objects or of buildings where an impressionist effect is sought, and, whatever faults of detail a close examination may reveal, there can be no doubt that the work, when viewed as a whole and from a distance, is often such as to compel the admiration even of the most severe critic. No one to whom the gift of artistic perception has not been altogether denied, can behold the limpid light of a tropic moon reflected in a thousand flashing points of green and blue from the tall spire

of a glass-encrusted Phrachedi without realising that only true art could have inspired the work before him, and unfortunate persons who can see no more than the mere rough detail of it are to be commiserated. The amateur of detail who cannot admire broad effects may, however, find something more pleasing in the lacquer and gilt cabinets, tables, trays, and other objects to be seen in the museums and in many private houses. This work, which is now unfortunately almost a lost art, once upon a time had very clever exponents in Siam, and their productions are now highly valued. It consists of an immense variety of designs worked out in gilding upon a smooth black surface of lacquer usually small and always exhibiting a laborious attention to the minutest detail. Scenes from the stories of Indian mythology and episodes in the lives of the Buddha are the usual themes, generally disposed round a central representation of the Teacher Himself or some sacred emblem such as the wheel called Chakr. Angels, nymphs, demons and fabulous monsters from Siamese fairy-land; princesses, distressed and otherwise; kings and warriors from the fantastic pages of inaccurate history, are portrayed in gold upon the black background, disporting themselves, always in strictly conventional attitudes, flying, running, fighting, bathing and reposing, with the Buddha eternally repeated in each of his recognised positions, calm and aloof amid stirring incidents of human and celestial love and war. While the details of these works are brought out with the utmost care, the general effect is not overlooked; the figures are placed in accordance with a general scheme in and round about the edges of panels and along carefully worked gilt border-lines, and sometimes the whole is enclosed in carved, lacquered and gilt frames set off with lines of red colour. Some of the most effective temple doors are ornamented with this work, but the best examples are found on ancient cabinets in which palm-leaf books

containing writings on sacred subjects are stored. Unfortunately the art as practised nowadays, compares ill with that of the past. The figures are crude and bear evidence of the haste and carelessness of modern workmen, while the variety of themes is much more restricted than of old.

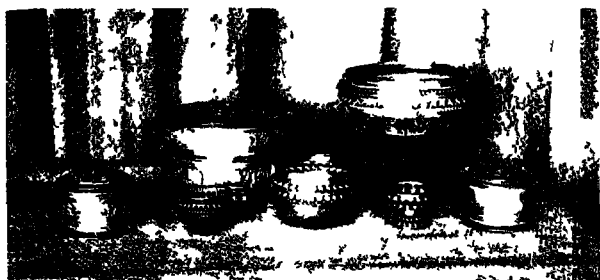
Betel-boxes, cups and trays of coloured lacquer are made in many parts of the country, notably in the north. The foundation of these is of bamboo cut into fine thin strips and closely woven together. The lacquer is put on in layers, each layer being carefully dried before the application of the next. Red, black and green lacquers are used and neat circular bands and floral designs are produced in these colours. The ware, when finished, is pliable, and a good cup or bowl should be capable of being compressed until the opposite edges meet without any damage to the lacquer or permanent alteration of the shape.

The art of inlaying lacquer-ware with mother-of-pearl is a good deal practised, chiefly for the making of trays on which offerings are taken to the temples, of covers for the begging-bowls of monks and of other objects of a like nature. The art was probably introduced originally from China but has long ago acquired a quite distinctively Siamese form. The shell, which is cut into small pieces of sufficient variety of shapes, is set in while the lacquer, which has been applied previously, is still soft, and the whole surface is subsequently allowed to harden, when it is ground down to an absolute smoothness and polished. Innumerable designs are used and the results are often very beautiful. Remarkable examples of this work, in the forms of boxes and of covers to contain palm-leaf copies of sermons and scriptural extracts, are preserved in the National Library in Bangkok. These are dated about 1835 and were mostly made to the order of King Rama III, Phra Nang Klao, great uncle of the present King. Here again the old productions are superior to the

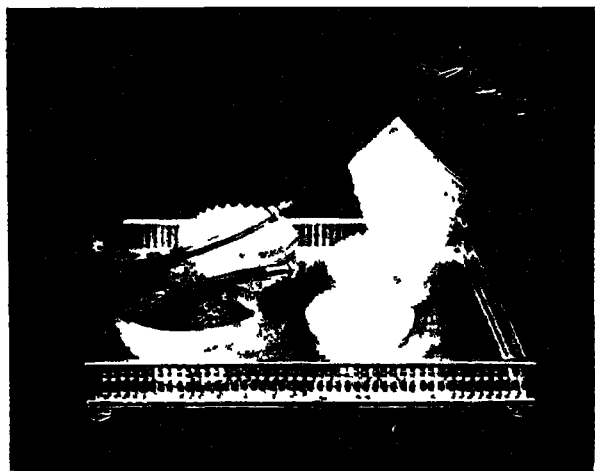
modern, for the best results are only to be achieved by slow, patient and careful work, which the Siamese of the present day finds no particular inducement to give. The inlaying of mother-of-pearl on ebony and other ornamental hard-woods is also practised, and articles were made a few years ago for exhibition in America, which show by their excellence of design and execution that the modern artists who make a precarious living by turning out work of this kind, usually of a quite contemptible quality, can still, with proper inducement and under fortunate conditions, produce results of great merit. The artists in this instance were long-sentence convicts to whom the best of materials were supplied by Government and who, naturally, had plenty of time on their hands.

Large quantities of gold-leaf are annually imported into the country and much is also made locally, with which the spires of Phrachedi, the columns of temples, images of the Buddha, the backs of palm-leaf books and a hundred and one other objects are thickly gilded. The application of gold-leaf to a sacred image is one of the popular ways of acquiring merit, wherefore most of the more notable images, more especially those which superstition has imbued with miraculous powers, are usually kept well covered with gilding. Considerable sums are spent on gold-leaf at the time of the annual pilgrimage to the Holy Footprint at Phrabad. Sometimes a man of wealth will gild a whole image of himself; at others a small quantity of leaf is contributed by each individual of a community until a particular image has been covered. The result is pleasing, but the work can hardly be dignified by the name of art.

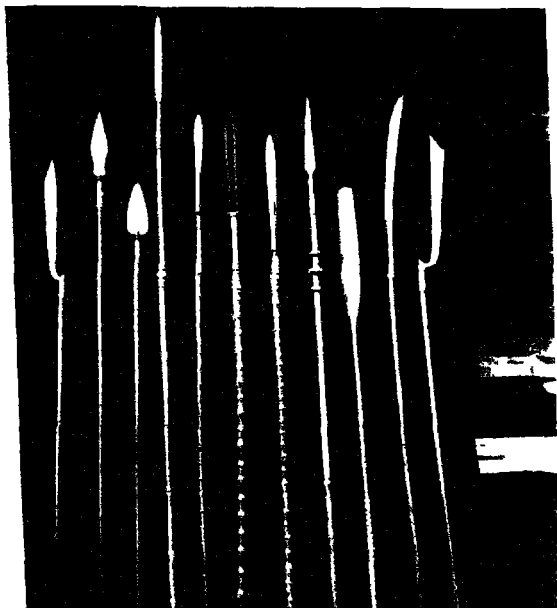
Silver Working is a form of art in which the Siamese particularly excel. The Court, and other silversmiths of Bangkok devote themselves chiefly to *repoussé* work in which the usual scenes and figures of legend and fairy tale are reproduced in high relief and with a notable skill. Such silver work is almost the only



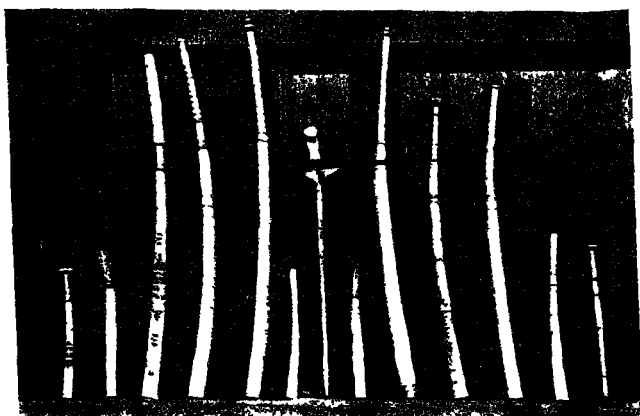
TAO SILVER



A SILVER BULL'S HEAD



SILVER MOUNTED SPEARS



SILVER AND IVORY WEAPONS

form of the national art for which any foreign demand exists, and to meet it a few silversmiths find a profitable employment in the making of articles of European fashion bearing stock Siamese designs. Thus photograph frames, fan-sticks, sugar-bowls, napkin rings, cigarette-cases, ladies' belt-clasps and numerous other articles can be bought by the globe-trotter in Bangkok, on which are depicted the posturings and the aerial gambollings of angels and demons, or the chasing of wood-nymphs by hideous satyrs, in the attitudes and amid the surroundings peculiar to Siamese fancy. Perhaps the commonest theme is that of the beautiful Nang Mani Mekhala, the Goddess of Lightning, hotly pursued by Ramasura (Parasuyana of Brahman mythology) the God of Thunder, fleeing before him for ever and always evading him, while at the same time luring him to the pursuit by languishing movements and amorous backward glances. Betel-boxes, bowls, dishes, and trays of similar workmanship and design are popular with the Siamese upper classes, and specimens are to be seen in most houses of the well-to-do. The art, which is closely allied to Burmese *repoussé* work, has of late years undergone some improvement by the introduction of highly skilled Burmese artists to assist the Court jewellers and to supply new designs. The best work is in very high relief, the smooth surfaces being highly polished and the detail worked out with great care. In addition to *repoussé* work, solid silver figures and other objects are cast in moulds and afterwards finished off, with scrupulous attention to detail, by the hand of the artist.

The Lao are also proficient in the art of working silver, their designs in *repoussé* work being quite peculiar and very effective. One of the most common patterns consists of circles of sharp bosses of different size and shape which appear on the tops of betel-boxes and round the edges of drinking cups in endless repeti-

tion. They are also very partial to the signs of the zodiac as ornamentation, but the details of such work are not so carefully rendered by them as by the Siamese. Bowls and vases of the lotus pattern are common in both Siamese and Lao silverware.

The old-fashioned weapons, which all the Lao and many Siamese still possess, are often heavily mounted in silver. The hilts, or rather handles, and sheaths of swords and daggers and the shafts of spears are encased in thin plates of the metal, the plainness of which is relieved by bosses and by coils of thin silver wire bound upon them in fanciful scroll-work patterns. The handles of swords are often of ivory which is sometimes quaintly carved, and weapons thus composed of ivory and silver have a very handsome appearance, but the blades, though often damascened or inlaid with small spots of gold or silver, are of soft untempered iron and therefore inferior for fighting purposes. In former days firearms also were embellished with silver. The heavy iron rifles and brass blunderbusses used in the ancient wars in Southern Siam are still preserved in some of the Malay provinces, and these have the stocks embossed with gold and silver and the barrels inlaid with silver flower designs. Two iron cannon presented by the King of Siam to Louis XIV of France and long afterwards seized and used by the *Sans-culottes*, according to Carlyle, at the storming of the Bastille, were heavily inlaid and ornamented with silver, the work of the most skilful silversmiths which the Court of Siam at that time could boast. Similar artillery is to be seen in the Bangkok museum now.

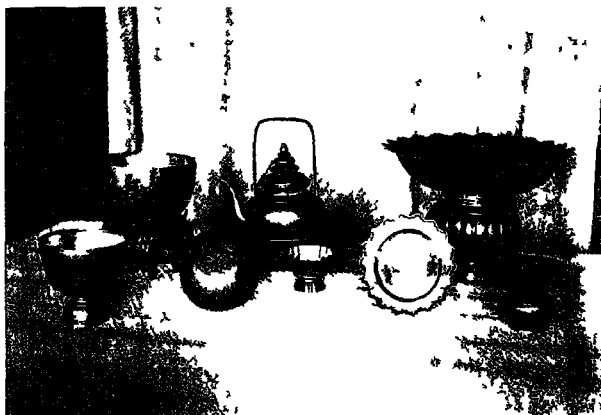
In the capital the popular taste in silverware has of late years been debauched by the presence of numerous Chinese silversmiths who turn out a large amount of work of a low artistic value. Stock dragons, prancing aimlessly on nothing, and elderly Chinese gentlemen strolling in groves of unnatural-looking bamboos, are replacing the graceful Siamese nymphs

and angels, for, though they are foreign to the ideas and traditions of the people, the commercial training of the Chinese enables them, by freely adulterating the silver, to offer their goods at a price impossible to the mere casual and leisurely, and at the same time perhaps more honest, Siamese artist. The efforts of the Chinese to copy Siamese designs are usually beneath contempt, but even these, by reason of their cheapness, find ready purchasers.

Perhaps the most distinctively Siamese art is a kind of "niello" work, locally called *Tompat*, which has been practised in the country for about eight centuries and in which a high artistic level has been attained. The process consists in the tracing of designs on silver by means of gentle *repoussé* work and afterwards filling up the slight depressions so made with a black metallic substance obtained from lead, copper and silver melted together with sulphur, fused into place and polished until a smooth, even surface is obtained, on which the details of the pattern are shown with clearness and effect against the black filling. That part of the silver which is thus left exposed is usually gilded, but in the more ancient specimens which have been preserved, such is not always the case and some of the most celebrated pieces are plain silver and black metal. The original home of the art is said to have been Nakon Sri Tammarat (Ligor), whither it may have come from Persia or from India, rather similar work having been produced in both those countries from very ancient times; but the making, as well as the use, of *Tompat* ware has long been widely distributed through the country. Trays, bowls, betel-boxes, dishes, even spoons and forks were formerly, and are still, made in this remarkable ware, and in the houses of well-to-do people a certain amount of it is to be found in daily use for ordinary household purposes. Formerly the patterns most used were representations of animals or of religious emblems. Drinking-bowls

usually bore figures of *Taypanom*, that is, royally clothed postulants in the conventional attitude of adoration, encircled by floral designs or by clouds, almost invariably with a *Racha Si*, or mythical lion, enclosed in a circle on the bottom. Modern designs are mostly floral, and though the metallic filling is often inferior to that formerly used and is sometimes carelessly applied so that bubbles and flaws occur, the general results are sometimes very little, if at all, inferior to those obtained in a former age. A great deal of intentionally bad *Tompat* ware is, however, made at the present time, for it is still a good deal in demand, though the public does not care to pay the price which first-class work demands. The Arts and Crafts School of the Royal Education Department, which has lately rendered much valuable service in the revival of Siamese Art, has given careful attention to the making of *Tompat* ware. The best living executants of the art have been engaged as teachers and a course of instruction is given which has produced several young artists whose productions prove that the artistic instinct is still alive amongst the people. The value of genuine old *Tompat* ware has increased very much of late years, as most of it has been bought up for private collections.

Jewellery. Almost the first idea which presents itself to the mind of a Siamese when, by a turn of fortune, he finds himself possessed of a little spare cash, is the purchase of jewellery, and this no matter how low he may be in the social scale or how little the possession of gold and silver trinkets may be in keeping with his personal appearance and condition of life. The reason for this lies, not so much in a desire for personal adornment and ostentatious display, though in these respects the women of Siam are in no way behind their sisters in other parts of the world, but rather in the fact that, until recently, the state of society was such that the man was accounted wise who kept his worldly goods



SIAMESE 'NIETTO' SILVERWARE



AN ILLUMINATED BOOK



ILLUSTRATION FROM A SIAMSE STORY-BOOK

in a conveniently portable form. Moreover, the mass of the people is slow to appreciate the Police, Courts of Justice and other adjuncts of civilisation as protectors of property, or the fact that wealth deposited in a bank is less likely to be lost than when adorning the persons of wives and children in the form of jewellery or concealed in a bell-lock teakwood box. Consequently the jeweller's art flourishes in Siam and its exponents are highly skilled in production, not only of jewellery in the forms peculiar to the country, but of trinkets and gauds of all kinds fashioned according to European models. Before she is able to walk, and years before clothes of any sort become a necessity, the Siamese girl begins to wear jewellery. Bangles of silver, or of gold if the parents are well off, encircling each ankle, and the small heart-shaped ornament alluded to elsewhere, called *chaping*, suspended in front by a cord round the waist, constitute a girl-child's everyday apparel during the years of infancy, to which on festive occasions, bracelets and a chain necklace are added. Also a gold pin for transfixing the top-knot when the wisp of hair left for the purpose has grown long enough to be dressed. In four or five years clothes supersede the *chaping*, and at about the age of 13 the jewels of infancy are all abandoned and the ears are pierced for the wearing of gold or jewelled ear-studs. The boys, in childhood, wear little or no jewellery, the string of phallic charms tied round the waist of the male infant scarcely coming within that category, but when adolescent the modern youth greatly affects studs, buttons, watch-chains, rings and even gold bracelets, a taste which, however, usually passes off with the arrival of years of discretion.

The cutting of gems is not very well understood by the Siamese and is mostly in the hands of Burmese or Shan experts, many of whom live at Chantabun and a few in Bangkok. Native sapphires, rubies and spinels are cut in facets but are more usually ground and

polished into a smooth oval shape. The gold used for jewellery is very pure and soft. Chain bracelets and necklaces are usually boiled, as a finishing process, in a solution the chief ingredients of which are a red earth, probably containing copper, and saltpetre. This operation imparts a deep red colour. Burmese and Malay gold ornaments are treated in the same way, the ruddy appearance being much prized by all the people of Indo-China, though to foreigners it seems scarcely an embellishment.

Drawing and Painting. (In these arts the Siamese are deficient.) The sense of colour appears to be little more than rudimentary, while that of form, more especially as regards still life, is seldom highly developed. Knowledge of perspective is crude. At the same time a certain intuitive capacity for outline drawing is very common, and an untaught Siamese child can draw goblins, demons, elephants, and fairy princes of the usual conventional kind with an almost uncanny skill, while every here and there a master is found whose work reveals some appreciation of colour, form, and perspective. The only art galleries of Siam are the walls of the cloisters which surround many of the larger Phrachedi, and the interior walls of temples. Here are depicted scenes from the Life and previous incarnations of the Buddha, and from the mass of legends and tales of ancient Brahmanism; also fanciful glimpses of the celestial abodes of the *Tewāda*, or angels, and of the different Hells which superstition has provided as places of temporary punishment for evil livers. In all except a very few, these pictures are mere jumbles of figures, intermingling in the utmost confusion with palaces, fortresses, ships, forests, and mountains of unimaginable colour and hopelessly impossible proportion. Perhaps the best of such works are in the cloisters at Wat Chang on the west side of the river at Bangkok. The frescoes on the interior walls of the royal Wat Phra Keo, within the precincts of the

palace, are good in colour but betray not the smallest consideration for the relative size of the various objects depicted, nor any but the most casual attention to perspective. Though the themes of these works are taken from ancient Brahman legend or from the Life of the Buddha, European figures dressed in the uniforms and costumes of the period when they were executed are freely introduced, as are wooden ships of war flying the flags of various western nations. Thus in scenes depicting the attendance of nobles at the Court of ancient Kapilawat may be found persons wearing the three-cornered hats, full wigs and long coats of Queen Anne's time, while the Prince Sithat (Siddhartha) going abroad (a later work, this), is escorted by serried ranks of red-coated, white-breeched soldiers with fixed bayonets! In fact, chronological detail receives from Siamese artists scarcely more respect than it does at the hands of some of the Old Masters of European painting.

A few pictures by local artists, some of merit, others of none, are to be seen on the walls of private houses, and recently the desire for mural decoration has increased, and to supply this want, works, usually of a religious character, have been sent to Europe and lithographed. The crude results of this enterprise are now exposed for sale in the shops of the capital and are hawked about the interior by pedlars. Whether or not they should find a place in a disquisition on Art is doubtful.

The art of printing patterns on cloth has been known to the Siamese for a long time but has now apparently to a great extent been lost. Cloths of an exceedingly fine cotton material covered with small devices in red and white, usually of a religious nature, are carefully preserved in many families and are regarded as almost priceless heirlooms. At the close of the nineteenth century printed *panung* were in common use, and in fact such garments, stiffened with wax, were then

considered the acme of fashion for ladies. But though tasteful in design and colour, the stiffness of the waxed folds between the legs made standing inelegant and walking ungainly, besides causing at times the revelation of more than strict modesty permits. They are now quite out of fashion and are very seldom seen.

There is no clear evidence that any of the **Porcelain**, referred to in Part IV above as being made at the kilns of Sawankalok and Sukhothai, was ever decorated with colour other than that, usually pale bluish green or grey, contained in the glaze, and rough outlines of figures done in black or blue under the glaze. Also there is the plainest evidence that no pure white porcelain was ever made in Siam. Hence there is reason to suppose that the very abundant polychrome enamelled white porcelain of design and colour peculiar to this country and usually known as "Siamese porcelain," was neither made nor painted in this country.

It appears that in the latter part of the Ayuthia period, the end of the seventeenth and the greater part of the eighteenth centuries A.D., the Kings and the nobles gave up using the porcelain of the country, owing doubtless to its increasing inferiority, in favour of ware imported from China, where the art of porcelain making and decoration was, at that time, at its zenith. Before long the ware was not only purchased in China but was made there to order and from that time down almost to the present it has been customary to send patterns and designs to China and have them copied there. Apparently there has never been any great demand for objects of this nature which are of ornamental value only, such as are so much prized by the Chinese. From the first it has been simply a question of obtaining articles required for daily use, of as pleasing an appearance as possible. Such articles are covered pots and rice-bowls, shallow dishes with pedestals of varying height, spittoons and cinerary urns.

The patterns went in fashions which were evidently set by the Royal taste, and mark epochs each with its own distinguishing characteristics. Thus, in the latter part of the Ayuthia period and the beginning of the Bangkok era, a coarse white porcelain was in favour, covered all over the outside and, in the case of rice-bowls and cuspidors, on the inside also, with rough but vivid enamels laid on thick. Five colours were used and the designs were chiefly similar to those used in the ornamentation of the celebrated silver *Tom* ware. *Taypanom* or postulants in the attitude of prayer; *Nora Singh* queer satyr-like creatures, half angel and half deer (or pig?), were depicted on a black or sometimes blue back-ground, besprinkled with objects that might be flames but were really conventional clouds. Lotus designs were also used, bowls being painted to look like open lotus flowers or covered with different coloured panels each of which bore a spray of the five precious lotus flowers (*Bencha Pratum*) which grow in the seven sacred lakes of *Himaphan*, the Siamese fairy-land. Rice-bowls were usually coloured green on the inside with an open lotus flower in pink in the centre.

In the first and second reigns of the present Dynasty the fashion changed. White porcelain of a fair quality was used, the *Taypanom* and *Nora Singh* patterns disappeared and a graceful diaper decorated the outside of rice-bowls which were now left white inside. Also designs of birds and flowers on a gold ground became usual. In the best pieces the centre of the covers of rice-bowls of this period was adorned with an open lotus design. Bowls were also deeper than before.

The third and fourth reigns saw yet further changes. The porcelain material continued to improve, bird and flower design became more frequent, and the Chinese makers seem to have incorporated more of their own traditional details and signs with the Siamese patterns they were called upon to execute. The *Taypanom* and

Nora Singh themes were reintroduced but in thinner enamels and of perhaps less graceful outline than the old Ayuthia wares. Also some of the characteristic Siamese shapes were reproduced in purely Chinese blue and white. Rice-bowls returned to the old, more shallow form.

With the opening of the fifth reign, 1868 A.D., the sending of patterns to China seems to have become less frequent. The Court and the upper classes began to use European tableware and also to cultivate a taste in true Chinese porcelain. The manufacture of porcelain of Siamese design began then to deteriorate and may now almost be said to be extinct. At the same time, however, the purely ornamental value of porcelain, as distinct from the utilitarian, dawned upon the Siamese mind, and a demand for Chinese porcelain set in which resulted in a large import of Chinese ware, good, bad and indifferent, and in the forming of some fine collections. This was followed by the discovery that the old Siamo-Chinese ware was, much of it, very beautiful in spite of the fact that it had been made primarily for use, and thereupon a veritable craze for this ware arose. Stacks of bowls and dishes, covered with the dust of neglect, were produced from cupboards and corners where they had stood unused and forgotten for years and were snapped up by collectors at prices which rose until they became absolutely prohibitive except to the very few. The result is that there are now some very beautiful and interesting collections of Siamo-Chinese ware, in which, however, there is scarcely a piece of later date than 1870 A.D. Occasionally efforts have been made by a few enthusiasts to paint imported porcelain in Bangkok, but these, notwithstanding the recent intensive cultivation of taste in such matters, have proved artistically beneath contempt.

Weaving and Embroidery. It has already been remarked that weaving has always been considered a suitable employment for the women of Siam, even for

those of the highest rank, and much of the work done by them deserves, on account of the richness and beauty of the designs employed and the degree of skill attained, to be included in the category of Art. A few years ago the costume invariably worn by the nobility at Court functions in Bangkok consisted of a tunic made of rich silk cloth, shot with gold and woven in an intricate diaper pattern, with a silk *Panung* below it. The uniforms of European style which are now the rule have replaced the old national full-dress costume, but though the demand for brocades and silks has in consequence fallen off, the looms of Korat and Chieng Mai still produce a good deal of the beautiful material for which they were famous in the past. The ordinary silk *Panung* is woven quite plain in the middle, and it is only in the deep fringe at each end that the fair artists who make them give the rein, always within the bounds of convention, to their fancy. Here all sorts of intricate designs are worked out, following one favourite general style having sharp angles of contrasting colours running up into the cloth and separated from the body of the fabric by a deep band of many shades, and often heavily shot with gold. Many very beautiful specimens of such cloths, presents made from time to time by the King, are preserved at the courts of the Chiefs of the Malay provinces, where they are used chiefly as palls at funerals of the nobility. In Chieng Mai, where the skirts of the ladies are not hitched up and consequently afford more space for display, the fanciful work is not confined to the edges of garments but is spread all over them in lines, bands, isolated flowers, diaper pattern and all manner of other designs.

The art of constructing imitation flowers from the parts of other, and real, flowers, which is practised with extraordinary skill by Siamese women, may well find a place in this chapter. The commonest flowers of the country are taken to pieces, and their petals and stamens are used to construct all kinds of exotic

blooms, faithfully copied from drawings and paintings, and so deftly and delicately is this done, so little do the slim, taper fingers injure the fragile material, that the eye is completely deceived by the results. A dinner table decorated with a display of tea roses or dahlias causes surprise in a country where such flowers do not thrive, until a careful examination reveals the fact that each bud and bloom is made from the petals of the common *Alamanda*, while the admiration excited by the view of a bouquet of sprays of the rarest orchids is intensified when it is discovered that it is not composed of orchids at all but of hundreds of little *Mali* (Jasmin) flowers dismembered and reconstructed in a totally different form with care and skill that are altogether astonishing.

ARCHÆOLOGY.

MANY circumstances have combined to prevent any great accumulation of archæological remains in Siam. The heat and humidity of the climate, the rapid growth of vegetation and, in places, the deposition of alluvial soil, have all contributed to destroy or to bury beyond hope of recovery most of the vestiges of man's past existence, so that although the country has been inhabited from very remote times by a population, once possibly larger than that of to-day, and sometimes of considerable enlightenment and no mean industrial and artistic attainments, very little remains now to attest former conditions of life beyond the ruins of the temples and religious monuments with which the people of old, like their now living descendants, invariably surrounded themselves. The fact that the dwelling-houses of the Siamese have always been constructed of light and perishable materials has, of course, assisted largely, not only in the complete effacement of the towns and villages of the past, but also in the destruction of all those other relics of humanity which, in latitudes where a rigorous climate necessitates the construction of substantial habitations, have been preserved with the houses containing them, to excite the admiration or curiosity of a remote posterity. Again, the custom of cremating the dead which has certainly prevailed ever since the inhabitants emerged from the primitive savage state, has robbed Siam of a source of archæological remains which in many lands is the student's chief or only aid ; for the desire, so common among the civilised races of mankind, to perpetuate the memory of the dead by striking and indestructible monuments, and to surround the body in the tomb with the various appurtenances of life, has always been lacking in the inhabitants of Siam.

Their philosophy has guided them rather towards the dispersion of all tangible aids to memory of the deceased, and has made them content to accept the complete annihilation of the body intended by nature only marking, occasionally, the spot where the corpse of some one or other of their great ones was reduced to ashes, by a nameless spire, all memory of the origin of which is usually soon forgotten.

The great perennial questions of the *whence* and *whither* of mankind have never at any time aroused violent curiosity in the average Siamese. Indeed, as regards past and future existences of the soul there can be for them no question at all, for each man accepts absolutely and without hesitation the belief in transmigration in which he has been brought up, and which is for him no debatable theory but an actual indisputable fact. As to what went before him and what comes after in the actual living world, the average man is, at most, content with a vague knowledge of history extending back for a century or so, while his philosophy teaches him that the future belongs to posterity and is no concern of his. It will readily be understood that owing to the various causes above-mentioned, the science of archæology has not been much cultivated in Siam, and in fact it seems probable that, not more than forty years ago, there was scarcely an individual in the country who had made any study of the matter at all, while the nation as a whole was supremely indifferent as to almost everything concerning its forebears.

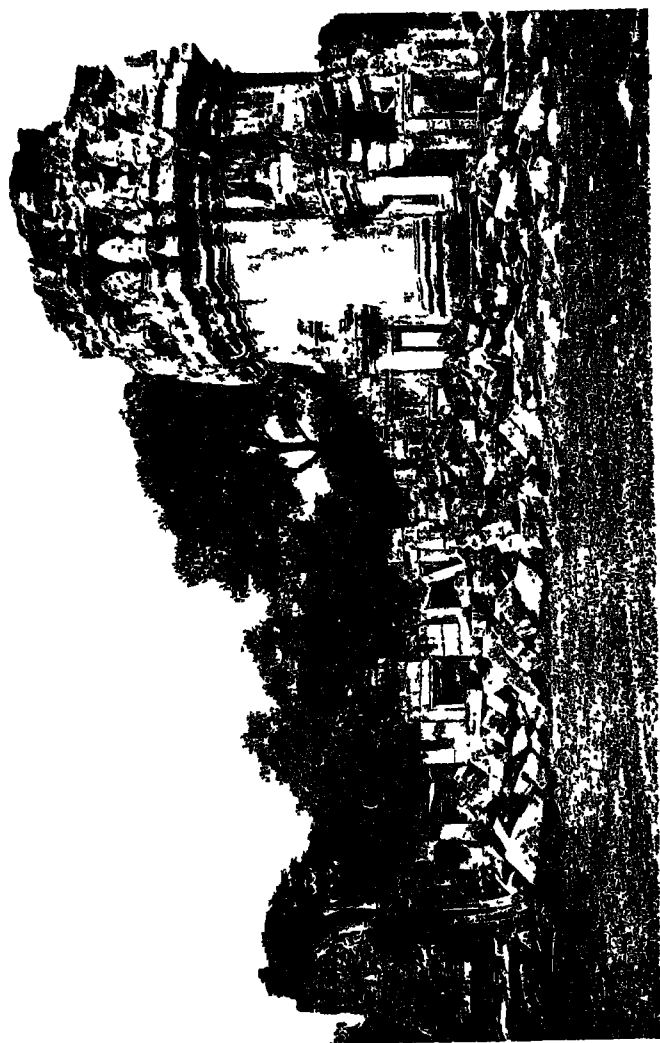
The first serious undertaking of archæological research in Siam was due to French enterprise. Ever since the middle of the nineteenth century, when the naturalist and explorer Mouhot lost his life while wandering alone in the forests of Further India, the hinterlands of Kambodia and Siam appear to have had a peculiar fascination for Frenchmen of the more adventurous sort. The exploration of the Mehkông valley by Garnier and his colleagues and his descrip-

tions of the ruined cities of Siam seen in the course of his travels, aroused considerable interest in archaeological circles in France, while, of the many Frenchmen who have made the excursion from Saigon to the magnificent ruins of Angkor, now, alas, no longer belonging to Siam, few can have failed to experience a desire to penetrate the mysterious lands beyond and to reveal to the world the secrets which they have felt must certainly lie hidden there. The investigations and publications of the Pavie Mission threw much light upon the probable conditions of life of the ancient inhabitants of Siam, while Fournereau, by his four years of labour from 1891 to 1895 which resulted in that handsome work "*Le Siam Ancien*," brought together in two volumes all the archaeological evidence then available, and, though committing sundry errors of deduction, gave to the study of the science so far as concerns Siam, a prominence to which it had not before attained. Meanwhile the Italian, Gerini, was prosecuting, during a long residence in the country itself, researches on this subject which have placed him in the very first rank of the enthusiasts, researches to which are due corroborations and corrections of the French inquirers, which have all tended greatly to the advance of the science. The Siamese of the upper and more educated and intellectual class, headed by the King himself, awoke some twenty-five years or so ago to a great interest in the subject; old writings were consulted, ancient cities were located, and, on being searched for, their ruins were discovered hidden away in forests where for ages they had mouldered unknown to any save a few ignorant country people. The ruins of Ayuthia, a city less than 150 years ago the centre of the Siamese universe, were, until the beginning of the present century, objects accounted entirely without interest even by the people of the thriving modern town but a few hundred yards distant, and, except for the idle speculation of an occasional European sight-

seer from Bangkok and for the investigations of the above-mentioned Savants, were left to the undisturbed occupancy of a few monks of contemplative turn and of Chinese market gardeners who cleared away patches of the all-enveloping jungle and planted orchards of custard-apples amid the refuse of broken bricks, tiles, stucco and pottery which covered the ground in all directions. These ruins, as well as those of other ancient cities notable in Siamese history, have now been laid bare of jungle and *débris*. At the expense of the Government, the sites and remains of the principal buildings have been identified, and museums have been established on the spot where objects of interest, from time to time unearthed, are carefully preserved.

It is a fact that as lately as 1902, contractors at work on railway construction were not only allowed, but encouraged, to use the material composing ancient *Phrachedi*, *Wat* and other buildings, as ballast, whereby more than one historical ruin of the greatest archaeological importance was totally destroyed.

Of the archaeological periods prior to that which has been called the Brahmano-Buddhist period, that is earlier than about 300 B.C., Siam has little evidence to offer. Celts of the neolithic age have been found in a few localities, but of the immense number of years which must have elapsed between the time when neolithic man hunted through the jungles, and the introduction of Brahmanism and Buddhism into the country, absolutely no vestiges have hitherto been discovered. From the latter event onwards, however, remains, chiefly of buildings and objects connected with religious worship, occur, if not abundantly, at least in sufficient number to afford some indication as to the condition of the inhabitants of the country. (Amongst the oldest cities of Siam are Sawankalok and Sukhothai, and near the ruins of these are to be found shrines built of laterite blocks said to date back two thousand years and showing in their style of architecture a distinct



RUINED SANCTUARY AT PIMAI, F. Siam (SANDSTONE).



PHRACHIDI AT WAT CHANG LONG, SAWANKHALOK
(Isterite and Stucco)

connection of idea between the people who made them and the races who built or excavated from the rock, the ancient temples of different parts of India. These shrines, the best known examples of which are those of the Vulture Nest Hill at Sawankalok, are certainly the oldest stone buildings in Siam. They were followed by more elaborate Brahmanic shrines and temples of laterite and of sandstone, and of greater size, ornamented and decorated with symbols of the religion, and with representations of various deities, and these in their turn were succeeded by temples and pagodas of the Brahmano-Buddhist style which found its ultimate expression at Angkor Wat and Angkor Thom near the great lake, *Tâle Sap*, in Kambodia. Such buildings were not confined to any one part, for their ruins are to be seen on or near the sites of most of the numerous cities which sprang up all over the country. The material used in their construction was apparently that most easily obtainable in the locality where they were built. Thus in Kambodia and in Eastern Siam, sandstone and sometimes blue slate were employed, images and other embellishments being carved in the stone itself. The finest examples of this work in Siam are to be seen in the ruins of Pimai Muang Tam, Nang Rong and elsewhere on the plateau east of Korat, in which the beautifully executed sculpture and carvings, and the massive proportions of the buildings produce that combination of sombre elegance and weight which is one of the most striking qualities of the style. In the ancient capitals of Northern Siam, Sawankalok, Sukhothai, and Pitsanulok, huge blocks of laterite were used, which stone, being rough and ill-adapted to sculpture, was cut out in the rough and used as a foundation for a very hard and durable stucco super-imposed upon it, in which a wealth of detail was worked out which gave to the finished structure all the appearance of the sandstone buildings of the east. In Central Siam, where stone of any kind was

difficult to obtain, buildings of which the ruins are now visible were usually of brick overlaid with stucco.

In spite of the hardness of the stucco, time and neglect have stripped the facings from most of the laterite and brick buildings, and in many instances the masonry itself has been split and overturned by the roots of great trees growing around and upon it. For the most part, therefore, the ancient buildings of Siam except those made of sandstone, are now mere skeletons of laterite or brick, but here and there specimens have withstood the ravages of time and escaped the destroying hand of man, and stand to-day as witnesses to the high artistic effect which was obtainable through the humble medium of plaster, and as models for the builders of the present time.

The sanctuary or temple at Lopburi, called *Phra-prang San Yot*, consisting of three heavy blunt spires surmounting small dark image chambers, is a curious example of mixed material, for here the main part of the building is composed of laterite blocks of cyclopean size to which the stucco with its delicate mouldings and tracery still clings in patches, while the apex of each gable, the sides and lintels of the doorways and part of the inner structure are of sandstone finely carved. The building is of the ninth or tenth century, A.D. and is Kambodian in design, and in construction a sort of link between the Kambodian and the Siamese methods. The beautiful Wat Phra Prang at Sawankalok and Wat Sri Sawai at Sukhothai, which were probably completed about the fourteenth century A.D., represent, with the Wat Chinnaraj at Pitsanulok, the highest excellence of stucco and laterite building. The ruins of brick and stucco Phrachedi and Phraprang, or reliquary shrines of the purely Buddhist and Brahmano-Buddhist styles at Phrapatum, Phrapadohn, Rajburi, Lopburi, and elsewhere in Central Siam are of all ages, and some of them are doubtless amongst the most ancient relics of man in the country. Very few of the older ones,



ANCIENT SANCTUARY KNOWN AS PHRA PRANG SAM YOT, TOPJUNT
(Sind lome Latetile und Succi)



INTERIOR OF PHRA PRANG SAM YOT

however, retain much of their stucco mouldings, but as this style came, with the concentration of the population in Central Siam, entirely to supplant the use of stone of any kind, there are fine examples of it, dating from more recent times, still extant in many parts.

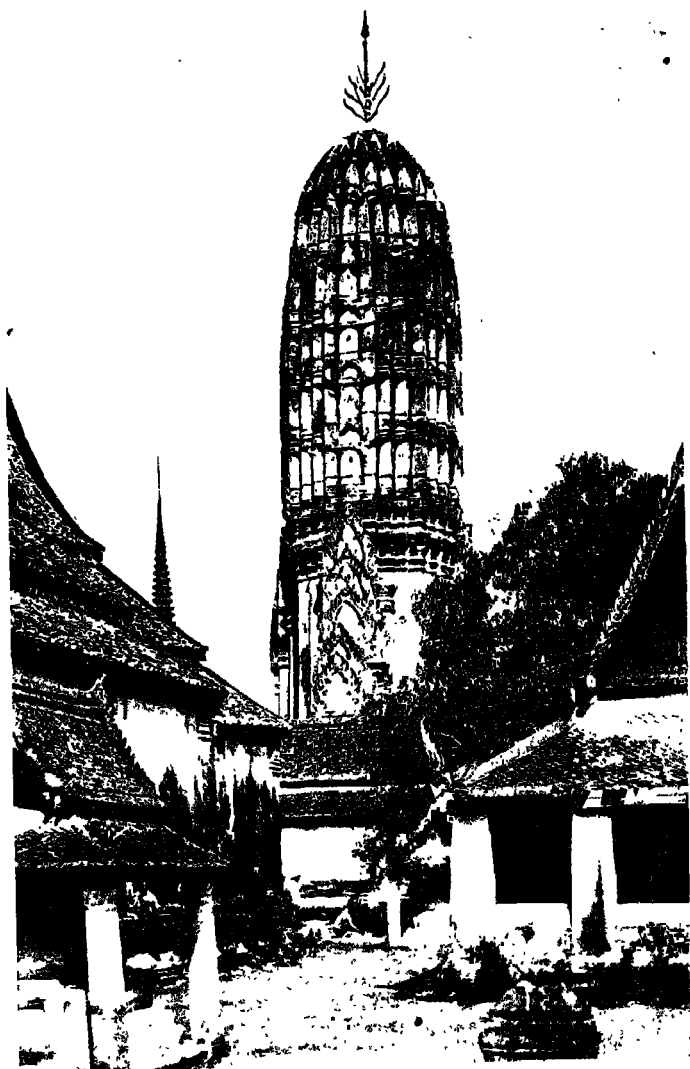
All the cities of Siam which were of any note were enclosed within defensive walls. Sukhothai, Sawankhalok and Lamphun (Labong), the most ancient northern cities, possessed double or triple defences of laterite walls, sections of which are still visible, barriers of great, evenly hewn blocks of stone standing in dense and lonely forests, the silent witnesses of human activity long past and forgotten. The cities of Central and Southern Siam from the earliest times, and those constructed after the thirteenth century in all parts of the country, had walls, usually forming an outer and an inner enclosure of brick and mortar. The brick fortifications of Nan and Chiang Mai in the north, of Lopburi in the centre, of Korat in the east and of Nakon Sri Tammarat (Ligor) in the south, the first four dating from about the thirteenth century and the fifth perhaps some hundred years later, are all in a state of fair preservation and exhibit remarkably similar characteristics of form and construction.

The remains of Ayuthia and those of Lopburi are of peculiar interest in that they represent all that is left of what may be called the mediæval period of Siamese history. The ruins of Ayuthia, still bearing in all directions the marks of the fire by which the Burmese conquerors reduced the city almost to its present condition a hundred and fifty years ago, having now been cleared, are preserved as well as may be. Sufficient is left of them to convey an idea of the greatness and strength of the former capital. Sections of the outer and inner walls still remain erect, huge masses of ragged brick-work, while the sites and foundations of the palaces and other buildings, the prototypes of many of those now standing in Bangkok,

can be identified. Here also are remains of churches and houses built by the Europeans who frequented Siam in the seventeenth century. At Lopburi are the ruins of the Summer Palace of King Phra Narai and near by stand the remains of the house and chapel where his minister, the celebrated Faulkon, lived and practised his new-found Roman Catholic faith, when in attendance upon his master in his rural retreat.

But these ruins at Ayuthia and Lopburi stand upon a soil comprised of the refuse of yet earlier cities and hold in their midst the crumbling remains of buildings of far older date, for both the sites were occupied by cities long before Ayuthia became the capital of Siam. The city of Dwarapuri or Dwarawati and later of Nong Sano or Shahr-i-Nao, occupied the site of Ayuthia during the centuries of Sukhothai ascendancy, and indeed the Burmese knew the city of Ayuthia itself by the name Dwarawati at the time of their later wars against it, a fact attested by Symes in the account of his mission to Ava in 1795 A.D. At Lopburi, in 1680 A.D., the King of Ayuthia could look from the window of his summer palace upon ancient Khmer sanctuaries, then, as now, ruins of hoary age.

↳ Inscriptions on stone, usually grey-green limestone of very fine grain or blue slate, have been found in different parts of Siam. These are in Pali, Sanskrit, Kambodian (Khmer) and in Siamese, and have been of service in proving the approximate dates, and the extent of the influence, of the more enlightened races that have occupied the country. The oldest inscription is in Pali and was found in the province of Kedah, until recently a part of Southern Siam. This bears a date of the fifth century A.D. and is clearly of Indian origin. Further up the coast at Takoapa an inscription on stone was recently found which has not yet been deciphered but which appears to be in an ancient language of Southern India and is supposed to date from the fifth century also. In the province of Lakon,



WAT CHINNARAI, PITSANULOK.
(Laterite and Stucco).



PHRAPATUM, THE LARGEST PHRANG DI, OR BUDDHIST
KUTIC SHRINE IN SIAM

across the Peninsula, and not many miles from Takoapa, stelæ inscribed with Pali and Sanskrit characters and a Pali inscription on brass have been discovered and have been identified as of the eighth and ninth centuries A.D. Also terra-cotta tablets inscribed with the Buddhist profession of faith in Pali, of a distinctly Indian style of character known to have been in use in the fifth and sixth centuries, were recovered at Phrapatum in Central Siam during the repairing of the great Phrachedi in 1857.

It appears to have been the custom from the earliest days of Buddhism for devotees to scribble formulæ containing axioms of the Buddhist faith on every convenient surface in and around a holy place. One of the formulæ most commonly used consisted of a few Pali words the meaning of which may be rendered thus :

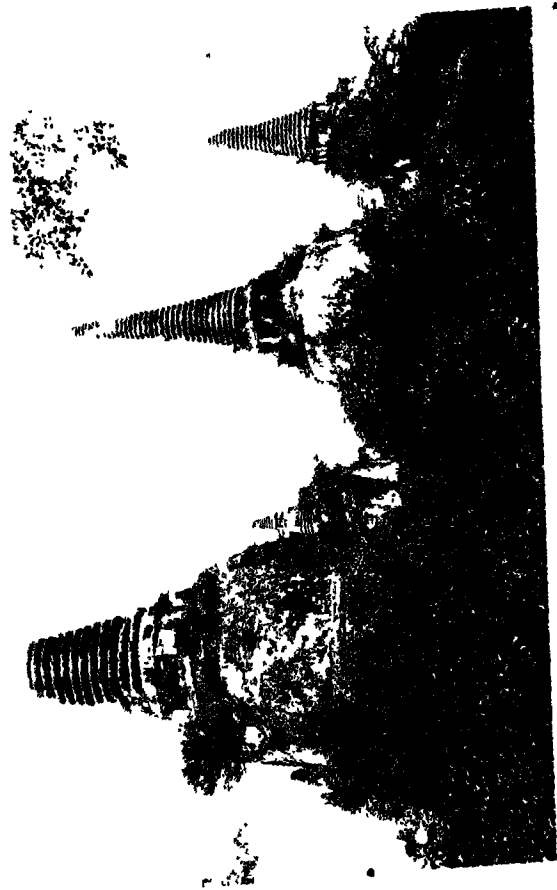
“ The effects which spring from every cause and the way of mitigation of these same are set forth by Him who has gone. This is the teaching of the Great Ascetic.”

And these are found scratched on stone or impressed in clay wherever the cult of the Buddha has flourished, in Siam not less than elsewhere. Clay tablets bearing, some a representation of the Buddha on the front with Buddhist scriptural words stamped on the back, and others the impression of one or other of the Brahmanical Divinities, have been found in the caves of Mat Harn near the town of Trang on the west coast of Southern Siam, a good way south of Takoapa. These clay tablets, locally called *Phra Phim*, or “ Stamped God,” are worthy of special note. Many hundreds have been found on the cave floors, usually lying in pairs face to face so that the impression on the front may be preserved. They are dug out from beneath a layer of bats’ guano sometimes more than three feet thick and, when first recovered, are quite soft, but soon harden on exposure to the air. Specimens

which have been examined by the British Museum authorities are pronounced to date from the twelfth century and to be identical in appearance with tablets from Kashmir, Tibet and parts of North West India, where also they are found on the floors of caves. It seems probable that the tablets may have been brought back from India by returning pilgrims and deposited in the caves for safe preservation or perhaps as offerings to local shrines, the occurrence of presentments of the Buddha and of Brahman gods indicating that the said pilgrims probably offered their devotions impartially to the older religion and the later cult. *Phra Pim*, of which there is a fine collection in the National Library, have been carefully studied by the learned Professor Coedis who has brought to light several new and interesting facts concerning them. :

The earliest Kambodian inscriptions on stone which have hitherto been found in Siam are at Chantabun and near Korat and are of date about the ninth century A.D.* Both Sanskrit and the Khmer language were employed and the inscriptions are chiefly concerned with recording the good deeds of the pious. Inscriptions in the Kambodian language, of later date, are fairly common, though those which have been found are probably as nothing in comparison with the great number which it may be supposed still lie hidden beneath the ruins of ancient places in many parts of the country. Known specimens occur at Phrapatum, Supan, Lopburi (a particularly fine example, dated about 1022, A.D.), and elsewhere, and mark the period of greatest Kambodian influence in Siam. In the thirteenth century the first stelæ adorned with Siamese characters appear, chiefly at Sukhothai, which by that time had become very largely Siamese. Subsequent inscriptions employ either or both the Khmer and Siamese character, but towards the fifteenth century the former disappears finally.

Of the many inscribed stones that have been found,



RUINED PHRACHEDI AT AYUTTHIA.
(Brick and Stucco)

(Sam II p 184)



BRONZE STATUE OF SHIVA FROM KAMPENG SET
(Now in the Royal Museum, Bangkok.)

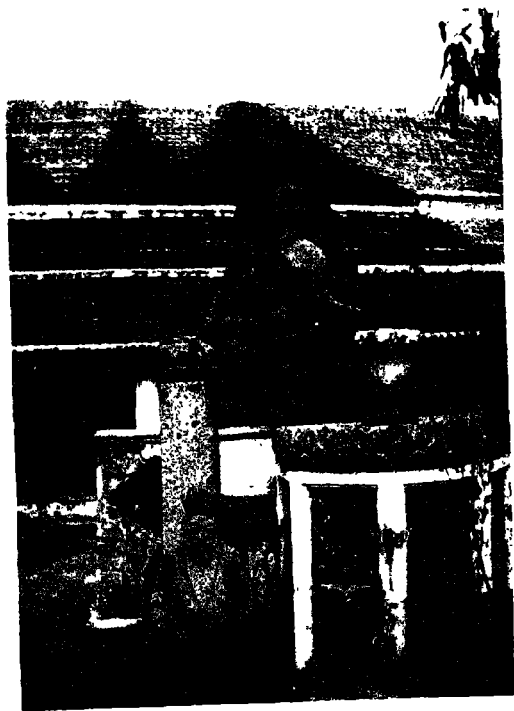
there are only four that afford important assistance in the work of historical research. These are, the Siamese inscription of King Ram Khamheng, from Sawankalok, of date corresponding to 1292 A.D. ; the Nakon Jum (Kampeng pet) inscription in Siamese of date corresponding to 1357 A.D. ; the Khmer inscription of King Kam Raten of Sukhothai, bearing date corresponding to 1367 A.D. ; and the Siamese inscription on the pedestal of the statue of Phra Isuen (Shiva), from Kampeng pet, dated 1433 Sakarat, or 1510 A.D.)

The first of these consists of an autobiographical sketch by King Ram Khamheng of Sawankalok, and is the earliest example extant of the use of the Siamese written character, the inscription, in fact, setting forth that the characters had just then been invented by the King himself ; which statement, if true, disposes of the later historians who would credit King Arunawratti Ruang with that achievement.* The King describes himself as the exemplary son of a craven father occupying the comparatively humble position of Governor of Tak, and how, by bravery and ability, he raised himself to the throne of Sawankalok and reconquered a great part of the fast disintegrating territories of that kingdom, including Pitsanulok. (Strange, how many usurping heroes seem to have come from Tak !) The next is that known as the Inscription of Nakon Jum, now identified with Kampeng pet, also in Siamese and showing that in 1357 A.D., that is subsequent to the foundation of Ayuthia, the chief of that settlement still styled himself King. (The third affords a further glimpse of the Sawankalok kingdom 69 years after King Ram Khamheng's time and probably subject to Ayuthia. The script is Kambodian, which seems to show that the new Siamese writing had not yet become thoroughly established. In this King

* Some authorities have lately sought to identify Ram Khamheng and Arunawratti Ruang as one and the same individual.

Kam Raten describes his succession to the Sawankalok-Sukhothai throne in place of his father, after a fight between the two places caused, apparently, by a dispute as to the succession ; and goes on to describe the greatness of his achievements and the depth of his learning both secular and religious. He records the casting of magnificent bronze images of Shiva and Vishnu, tells how he invited a high priest of Ceylon to visit him and how, under his holy guidance, he became engrossed with religion to the detriment of the State and was only induced to return to the consideration of mundane affairs by the united prayers of his neglected people. He states that he was so beloved by his subjects that his name, Phrabat Kam Raten Sri Suriya Wongsa Rama Maha Dhamadirajadiraja was, so at least Fournereau translates the script, " never out of their mouths " ; a fairly considerable mouthful !

The fourth inscription is from the pedestal of Phrabat Kam Raten's bronze statue of Shiva and was inscribed by Sri Dharma Asokaraj, who ruled at Kampeng pet in 1510 A.D. The inscription explains how this person brought the statue from the ruins of Sukhothai and installed it at Kampeng pet to watch over the living beings, ' biped and quadruped,' of that countryside. It further sets forth the restoration of sacred reliquaries, the digging of new canals and repairing of old ones ; the prohibition of the sale of cows for slaughter to heathen hillmen, and concludes with a dedication of all these good works to the ' Two Kings.' This inscription is important as showing that in 1510 A.D. Sukhothai was in ruins, that the chief of Kampeng pet no longer pretended to kingship and that at this comparatively modern date Brahmanism was still firmly seated in the hearts of men. (It is interesting to note that in 1921 A.D., a petition was presented to the Government by certain inhabitants of the modern village of Kampeng pet, praying that the slaughter of cows might be forbidden there (an almost unheard of request in modern Siam). This last inscription also



STONE IMAGE OF GANESH, NOW IN WAT PHRA KEAO, BANGKOK.



INTERIOR OF WAT CHINNARAT PITSANULOK
(The image is 700 years old)

explains the presence of Prabat Kam Raten's statue of Shiva amongst the ruins of Kampeng pet. The later history of that statue is not without interest. It was found amongst the ruins of Kampeng pet by a German trader in the middle of the nineteenth century. The German, true to the type lately displayed in the destruction of Belgium, and the looting of Northern France, knocked off and stole the head and hands of the statue and tried to get them out of the country. He was made to disgorge, however; the parts were rejoined to the body and the whole, together with the Statue of Vishnu, discovered about the same time, were set up in the Bangkok museum where they now stand, admittedly the finest known examples of the Siamese art of bronze casting.

The remains of stone and bronze sacred images are the commonest form of antiquarian relic found in Siam, and the site of each ancient city is still covered with them, although thousands have been collected by the devout and consigned to places of safety. Brahma, Shiva, Vishnu, Lakshmi, Ganesh and of course the Buddha, are the usual subjects of these productions which, in fragments or entire, roughly made or of the minutest and most intricate workmanship, are unearthed whenever a railway cutting is made, a foundation is dug or a ploughshare is driven, upon any of the innumerable spots once sacred to the uses of religion or which were the dwelling-places of dead and gone generations of men. In Southern Siam, particularly on the west coast of the peninsula, images of Shiva, Vishnu and Lakshmi, known to the Siamese as Phra Isuen, Phra Narai and Phra Naret, carved in a stone not found locally, have been discovered on the hill-tops or engulfed in the trackless jungle, and so old that even the legends concerning them have been forgotten. Modern investigators, assisted by the inscriptions found near by, conclude that these may have been brought over from India by perhaps the very earliest Brahmans who found their way into

Further India. Elsewhere in the country, round about the sites of ancient cities, the Brahman gods are found side by side with statues of the Buddha in all the traditional poses. While amongst the most ancient ruins the images of Brahman deities outnumber those of the Buddha, in localities of more recent settlement the former become less frequent until, when modern towns are considered, it is found that they have practically disappeared in favour of the latter. It is a significant fact, however, that in the upper regions of Northern Siam, Brahman images are rarely met with.

The better executed of the old images of the Buddha have in many cases been installed in modern temples and some of the best have been removed to Bangkok. Here and there, also, preserved in the precincts of temples, are found symbolic relics of Buddhism carved in stone which farmers have unearthed when ploughing, while of the lesser Brahmano-Buddhist gods, Rain-gods, Earth-gods, War-gods and angels (Téwada) of every description and rank, a large number of examples have been rescued. The museums of Bangkok and Ayuthia contain specimens of brass-work, porcelain, and wood-carving which have been gathered from among different ruins and of which many have a considerable archæological value.

Siamese Archæology, primitive though it be, has already proved of use in corroborating or correcting theories of students as to the origin and the racial affinities of former inhabitants of the country, and regarding the important question of the relative importance, from time to time and in different localities, of the Brahman and Buddhist religions. The study of the science having recently received much impetus from the awakening of Siamese interest, will probably advance rapidly in the future, and there can be little doubt that many of the mysterious gaps and silences which intervene in the history of the country are destined ultimately to be filled in by the effects of this awakening.

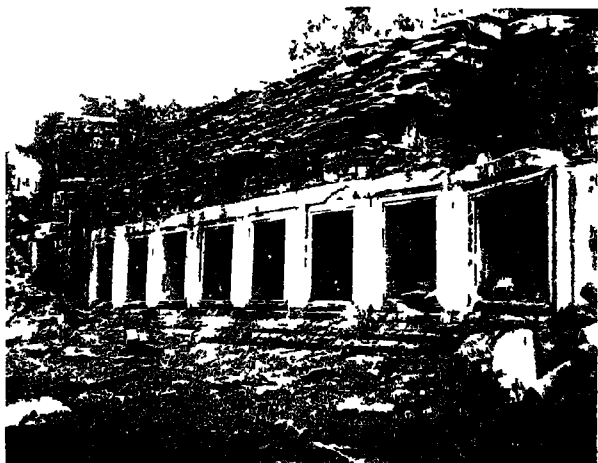
ARCHITECTURE.

IN modern Siamese architecture, Indian influences are plainly discernible, and there seems to be little doubt that the first knowledge of the art of building anything more than the rudest of hut shelters came from the great sub-continent to the West. It is probable, however, that this happened at different times and by different ways. The Southern Indian Dravidian races who came to the country either round or across the Malay Peninsula and settled in various coast districts of Further India, doubtless introduced their own ideas of building ; ideas from which, with the passage of centuries, the typical Khmer style, through gradual stages, was evolved. At a somewhat later date another and very different set of ideas came to the country with Buddhist Indian and Cingalese traders, colonists and, perhaps, missionaries, and a further edition of these ideas was brought in from the north, having been transmitted from Northern India, through Burma and Assam, to the Lao-Tai races near the borders of South West China and spread by them through the northern parts of Further India. Thus two distinct styles of architecture were in early times in contact in Siam, the eastern, Khmer, or Brahman style, ponderous but highly ornate, and the western, or Buddhist, light and airy but severe.

The finest efforts of the former were expressed in grey or red sandstone, usually the former ; great blocks laid in parallel courses closely fitted without mortar or cement of any kind and ornamented with a profusion of religious, floral and other designs carved deep into the stone. Remains of Brahman sanctuaries in this style are dotted all over the table-land of Eastern Siam and occur in the valley of the Pasak river at about a hundred and one degrees East Longitude, but

no trace of them has yet been discovered further west. Passable imitations of the style were obtained with bricks and great oblongs of laterite, having decorations carried out in a very durable stucco with which the wall surfaces were thickly coated, occasionally supplemented with carved sandstone doorposts, lintels and corner embellishments. The remains of buildings in this latter style which may be called depraved Kambodian, are to be found mingled with ruins of the pure Kambodian, all over the Mehkông region and extending far into Siam, in fact right across the latter, where the style in time became still further modified. For buildings of the Buddhist style, laterite blocks or bricks, covered with stucco, were used indiscriminately at first, but subsequent to the thirteenth century laterite as a building material seems to have been abandoned.* In neither system was the principle of the true arch used, either on account of ignorance or, more probably, of prejudice, but curved roofs were made by means of a gradual overlapping of successive ascending horizontal courses of masonry. The use of uncovered stone and sculpture appears to have been generally abandoned about the eleventh century A.D., both styles being thereafter rendered in bricks, mortar and stucco. By slow degrees also the styles themselves amalgamated and the characteristic Siamese architecture of later times was evolved. One of the most distinctive features of the eastern style was the Phra Prang, the blunt and angular spire surmounting Brahman temples and sanctuaries, examples of which are to be seen towering above the most ancient Khmer buildings, while an equally distinctive feature of the western style was the Phrachedi or Buddhist relic shrine, a tapering circular monument, sometimes of great height, terminating in a tall thin spire. These two features are reproduced in endless variations and combinations in modern religious monumental archi-

* Vide Archæology, pages 175-88 above.



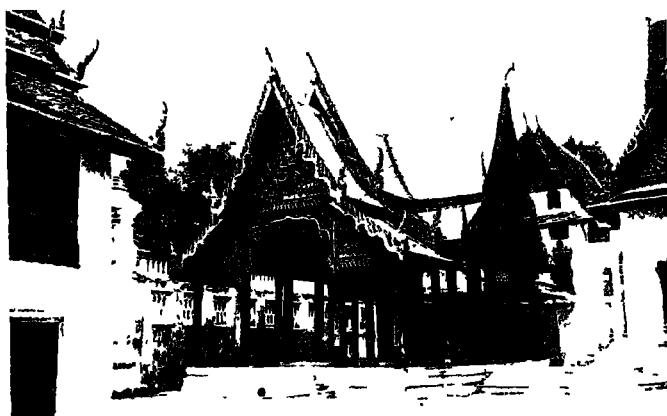
RUINED CLOISTERS PIMAI SANCTUARY, SIAM SHOWING
CONSTRUCTION OF ROOF



INTERIOR OF RUINED CLOISTERS PHRA WIHARN, EASTERN SIAM



PEASANT'S HOUSE, NORTHERN SIAM



HALL, OR SALA, WITHIN THE PRECINCTS OF THE ROYAL PALACE, BANGKOK

ture, in which, also, the influence of European models is now occasionally to a certain extent visible. One or more monuments thus constructed are to be found in the enclosure of every monastery and, being by far the most durable buildings which the Siamese have at any time erected, the more ancient specimens remain to mark the sites of vanished cities in all parts of the country. The Phrachedi, or rather its prototype the Indian Stupa, is said to have had its origin in the mound which the Buddha directed should be raised over his body after death, but it is probable that the instructions were given by the Teacher in consonance with a much more ancient custom, and that the Siamese shrines which enclose some real or fancied relic of the Buddha, or contain a part of the ashes of departed Kings, are in fact an expression of that same earliest human instinct which caused the erection of rough cairns over the bodies of deceased chieftains practically all over the prehistoric world.

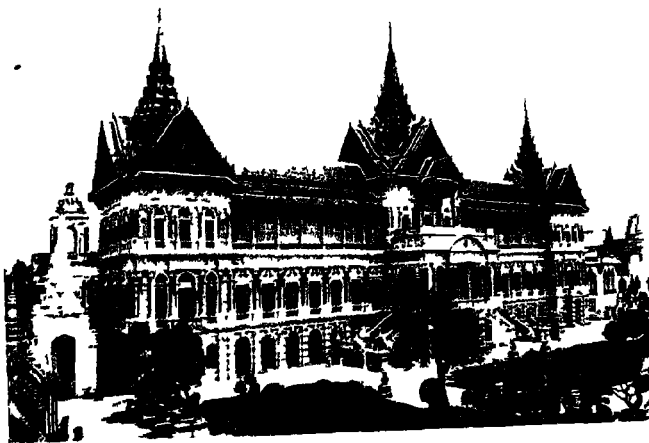
The great majority of Siamese houses are built of timber or even lighter materials, varying from a few bamboos topped with grass thatch, to elaborately worked teak timber supporting a tiled roof. The form, however, remains much the same throughout and consists of an oblong building supported well above the ground on posts and having a steep gable-ended roof, the larger houses of the upper class consisting of mere repetition of this unit in a series of buildings placed close together to form a more or less continuous whole. Such buildings call for very little in the way of plan or design previous to construction. Every countryman knows how to build a house of the usual type and has only to be told how many posts are to be used, that is, the size of the house, to be able to assist in the erection of the dwellings of his friends, which he does for nothing more than the hospitality of the proprietor while he is so engaged. For the more elaborate buildings a model consisting of main support-

ing posts, rafters and roof-tree is sometimes made in order to supply ideas before construction. Complicated panelled walls of teak or, in Southern Siam, of *takien* wood, which form part of the better class houses, are the work of experts and are usually made with great deliberation and added one by one to the house, sometimes months or even years after the dwelling has been inhabited.

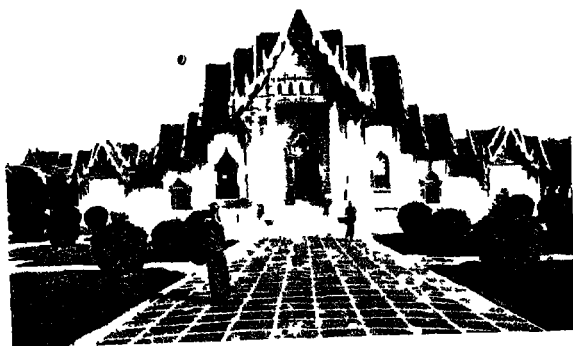
It is not difficult to perceive in the form of the ubiquitous modern temple a relationship with the primitive form of dwelling-house. The same oblong shape is there, with the gable-ended roof and the supporting columns, and the temples, though now invariably executed in masonry in the plains, can still be seen in what must have been the earlier form of timber and thatch in the far-away mountainous districts where the people retain many of the characteristics of their Lao ancestors. Here and there very ancient Buddhist temples have survived, as at Pitsanulok and Nakon Sri Tammarat, in which the double row of inside columns that nearly always support the roof of these buildings, though of masonry, are rounded to resemble wooden pillars, the two rows of columns in some cases leaning inwards towards each other in the manner once common to the structure of all sacred or royal edifices; and in a few other cases, as at Lamphun, Chiang Mai and Chiang Rai, these pillars are real timber, huge logs of teak or other indestructible wood, encrusted thickly with ancient lacquer. The principal temples of the more ancient cities such as Sawankalok, Sukhothai, Pitsanulok, Wieng Chan and others, seem to have had rounded columns but in all modern examples the roof supports are undisguised square brick pillars. The temples differ in form from ordinary dwellings in having porches or false roofs projecting one below the other beneath the gables and, usually, highly ornamented. In former times the centre of the temple, or the Holy of Holies, stood in a considerably raised position and was approached by flights



EARLY 19TH CENTURY EUROPEAN INFLUENCE PALACE OF KING RAMA IV AT TOPLUM 17TH CENTURY RUINS ON LEFT



IHI MAHA CHAKRI PALACE



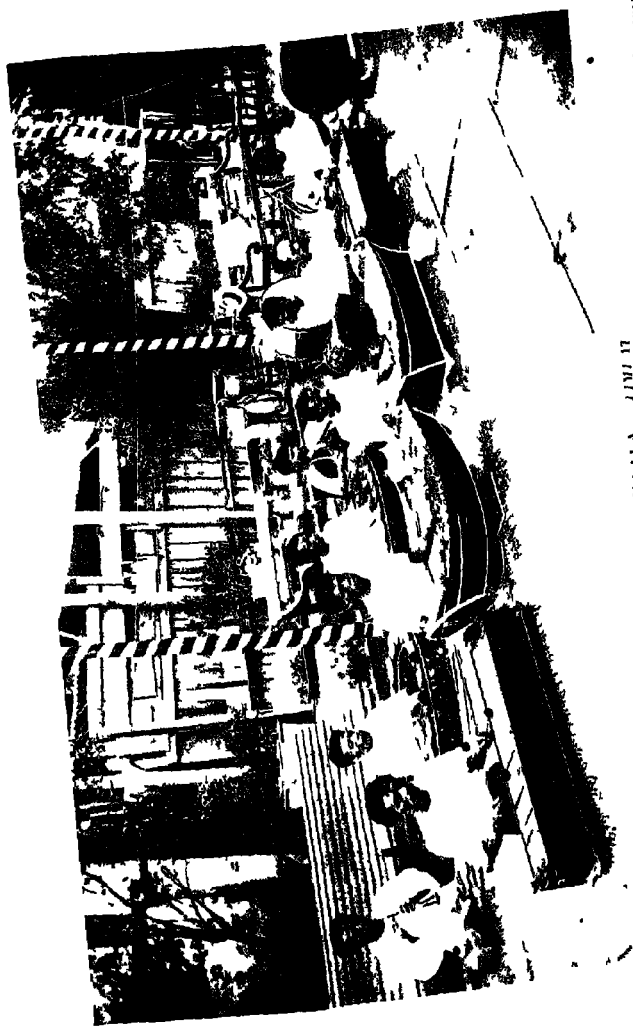
WAT BENCHAMAPOPHIT BANGKOK

of steps ascending under a series of projecting porches. Now, however, the steps have in most examples all but disappeared and but two or three of the porches remain, constituting the chief outside beauty of most of the buildings. The porches, and the side roofs of the peristyle surrounding the temple, which is often but not always present, also represent the multiple roof which ancient laws permitted for the use of shrines. The same system of flights of steps and platforms under ascending roofs was formerly employed in the construction of palaces or rather of the audience chambers of kings, and porches similar to those of the temples are still to be seen in the architecture of some of the very old-fashioned royal buildings. One of the most beautiful specimens now extant is the audience hall on the eastern wall of the Grand Palace at Bangkok, a series of most graceful gables ascending from north and south to a central roof surmounted by a slender spire, beneath which in bygone days the king sometimes sat in state, with his courtiers arranged in order of precedence on the steps on either side of him, and spoke with his lieges prostrated below and outside the walls.

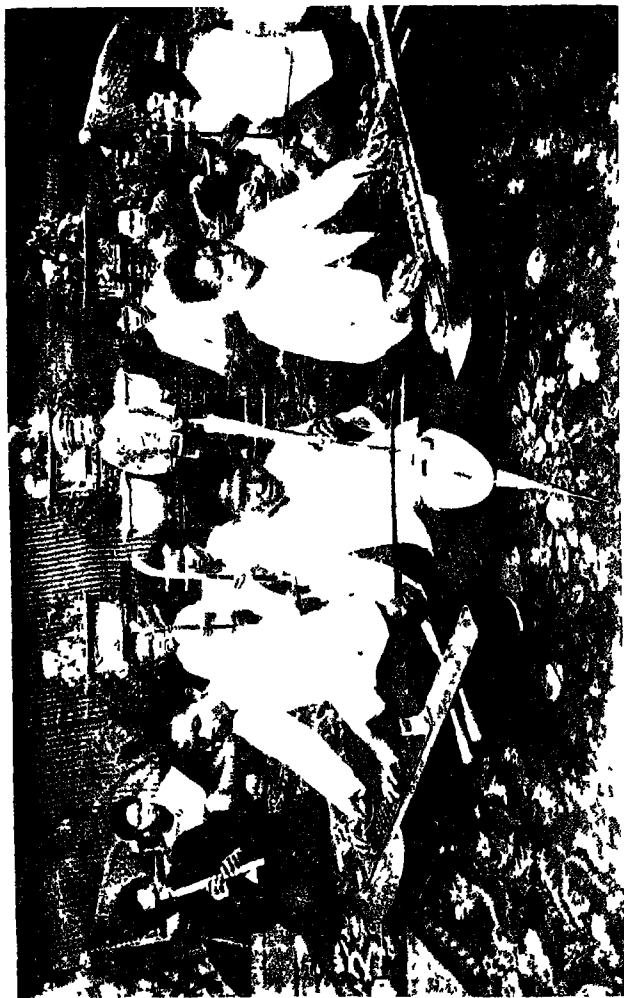
In the early days of intercourse with Europeans there was introduced into Siam a strange barrack-like style of architecture which, materialised in brick and mortar, found much favour with the upper classes. This style persisted until the middle of the nineteenth century, and interesting examples of it of various dates are extant at Lopburi, Ayuthia, Ratburi and Petchaburi as well as in Bangkok. Its chief features were, very thick walls, practically no eaves, little in the shape of loggia or verandahs, small windows and doors all of heavy wood, lofty square rooms and floors of very wide teak planks. The Amarindr Palace in the Grand Palace enclosure, still used on state occasions, is the most striking example of this style in the country, its great size and curious old-fashioned decoration combining with its massive simplicity of design to give it a certain impressive charm. In the middle of the

nineteenth century the uglinesses that passed as modern architecture in Europe at that time made their way to Siam, and the Great Maha Chakri Palace was planned in accordance therewith, but was saved in appearance by the substitution of a beautiful roof of pure Siamese design for the monstrosity intended by the European architects. A similar style was also adopted for the construction of the various Government Offices which came into existence with the reformed government, and the Ministries of Foreign Affairs, Finance, Interior and War, and later on of Justice, large and roomy structures of the simplest possible form and altogether bare of ornamentation either without or within, were good examples of this period. Towards the end of the century, however, the phenomenal architectural awakening of the western world that was taking place found reflection in Bangkok. Princes who had travelled abroad and who had been entertained at the Courts of Europe, were no longer content, on their return home, with the workhouse-like buildings that had satisfied their fathers and grandfathers; and the palaces, public offices and houses which they caused to be erected were more elegant and more ornate than the older structures, and at the same time better adapted to the tropics. The earlier of the handsome buildings in and around the Dusit Park, laid out at the close of the century, are nearly all in an imposing and somewhat florid Italo-Eastern style, while later structures, to the erection of which there seems to be no end, follow the same style with tendencies towards exaggeration to the verge of architectural incoherence.

Meanwhile the ancient national architecture has been saved from oblivion by the care of the King, by whose orders a body of artists is employed in exhaustive studies of ancient buildings and in the application of the knowledge thus acquired to the construction and embellishment of religious and public edifices of which the Benchamabophit temple and the Royal Pages College are perhaps the most notable examples.



SIAMSI ORCHESTRA 1941
 (Hammocks, Drums and Gongs with *Pi Chana*)



SIAMI SI ORCHISTRAS V HORI
Drum, Flute, Drums with Flute

MUSIC, DANCING AND THE DRAMA.

THE Siamese are a very musical people and surpass all the other eastern races, with the possible exception of the Burmese, in the elaborate treatment and consideration which they devote to this form of art. Their musical conception, however, differs very greatly from that of western people, and to the unaccustomed European ear their music sounds bizarre and often unpleasant while, similarly, the Siamese distinguishes at first no beauty in the music of Europe. This, however, is a natural result of the dissimilarity between the systems, and it is merely a matter of time and use for the musical expressions of the one people to become intelligible to the other.

The Siamese gamut consists of seven equal intervals each of which is exactly $1\frac{1}{2}$ semitones, which division renders the chromatic scale impossible and prevents the satisfactory rendering of European music on Siamese instruments, though, thanks to the influence of American missionaries, the repertory of every Siamese orchestra contains inspiring Western airs such as "Yankee Doodle," and "Marching through Georgia," which are performed with a zest that possibly compensates in a measure for want of accuracy in tone. The general impression of Siamese music is that it is all played in a minor key, but this is not the case, for the ordinary scale has no relation to the European minor. The effect as of the minor is produced by the often plaintive nature of the music, a quality which is aptly expressed by the long-drawn-out syllables 'No—i, No—i,' used by the Siamese when singing without words. Siamese music is, however, by no means all in plaintive cadence. The orchestral music is often of a very sprightly nature, and many tunes are always played in a loud, not to say noisy, manner.

Harmony is not understood or practised, but some extent of simple variation is obtained by the use of counterpoint. Time is very carefully observed, and is always either $\frac{3}{4}$ or $\frac{4}{4}$. Orchestral music is always played in unison.

(Siamese music differs scarcely at all from Burmese, and most of the instruments used are common to both races. It is difficult to determine in which country the peculiar form of the art was first developed, for while the Siamese imagine that the majority of their instruments came to them from Burma, the Burmese say that many of their own are of Siamese origin. It appears certain, however, that the Burmese have borrowed much of their music from Siam, and the peculiar stately airs played before the Burmese King in former days, and still in use to indicate the presence of royalty on the Burmese operatic stage, are known as the *Yodaya*, that is, the Ayuthia, or Siamese, style. It is probable that most of the instruments are derived from ancient primitive Indian models, and that they have gradually been altered and amplified both in Burma and Siam to meet the requirements of increasing elaboration in the art. The instruments used in Kambodia also strongly resemble those of Siam.)

The taste for music is so widely diffused that almost every man is more or less proficient in playing at least one instrument. Women usually confine their musical accomplishments to the stringed instruments, and most girls of education play the Siamese viol (*saw Thai*) or the zyther (*takhe*) in private, while there are a few highly gifted women professional players of those instruments, more especially performers upon the *saw Thai*. Both sexes are taught to sing in early youth. Guilds for the training of musicians at one time existed but have long since fallen into disuse, and the chief agency by which playing and singing are now kept up is the theatre. Troupes of strolling players are to be met with in all parts of the country, and many

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of the nobles maintain whole companies in their households. All the national plays are operatic, and therefore the actors are all singers and are accompanied, wherever they perform, by an orchestra of trained musicians.

As there is no form of musical notation, all music is learnt by ear and is handed down by tradition. Beginning at an early age, both singers and instrumentalists soon master all the well-known songs and airs and frequently acquire a repertory of surprising extent. A great deal of time is spent in practising, and the technical skill acquired by even commonplace performers is very considerable.

Instruments of percussion, stringed instruments and wind instruments are all used in the production of Siamese music, but those of percussion are the most numerous, consisting of drums and gongs of many kinds and of xylophones or harmonicas. The drums, except the largest, are not usually beaten with drum-sticks but are played by tapping and rubbing with the hands, considerable tonal expression and rhythm being obtained by checking and varying the resonance with the fingers. The drums most commonly in use are the *talot-pot* and the *ta-pon*, slightly barrelled wooden cylinders about twice the length of the diameter, closed at both ends by cow-skin drumheads and either placed on a low stand in front of the performer or held in his lap as he sits on the ground, with the ends convenient to his hands. The fingers and the palms of the hands are used separately or together in playing, and a great deal of flourishing and gesticulation is indulged in by the performer, who often works himself into a state of passionate excitement over his instrument. The *klong yai*, another drum, is larger than the two former and is shorter in proportion to its diameter. It is sometimes very large, is played or rather thumped with a heavy stick, and gives out a loud but not very resonant sound. The *klong Khek*

or "Malay Drum" and the *song nah*, long and thin cylinders closed with cow-hide, are much used for solemn processional music. They are supported by a cord passing round the neck of the player and are struck with a short curved drumstick held in one hand while the fingers of the other are used to regulate the volume of sound. The *thon*, which is a hollow cone with a drumhead at the larger end only, varies much in shape and size, being sometimes shaped like a Benedictine bottle and not very much larger, but sometimes like a gigantic sherry glass hollowed right through the stem. The latter are occasionally quite six feet long and give forth a splendid deep note of great resonance. *Thon* are played by striking with the hand. There is also a drum resembling an overgrown tambourine and called *rumana*, which is much used for indoor music, being held in one hand and beaten with the other. It is an instrument introduced from the Malay country whither it probably found its way from Arabia or Egypt.

The ordinary gong, or *mong*, has a place in every orchestra, being usually represented by two or three instruments of harmonising tones, struck in a simple ascending chime as an accompaniment to the air. These are made of an alloy resembling bronze, usually containing a certain amount of silver, and have a rim some three inches deep and a big boss in the centre. The best *mong* came from Burma. A very peculiar instrument is the *klong*, a circular wooden frame often curiously carved and inlaid, upon which a series of small brass gongs are strung horizontally. The frame, which is from a foot to eighteen inches high, encloses a space of some three feet diameter in which the performer sits, thus having his notes arranged all round him. The *klong yai* has sixteen gongs, each producing a different note, arranged in a regular scale. The *klong lek* has twenty-one gongs, smaller and consequently of higher register than the

klong yai. This last is the principal instrument of the orchestra, in accordance with which the other instruments are tuned and from which the singers in theatrical performances take their note. The *klong* player, who acts as conductor of the orchestra, must of necessity combine physical activity and powers of endurance with his high musical gifts, for the playing of the instrument demands frequent and rapid turning and twisting of the body to reach all the notes, and provides a form of violent exercise which none but the robust could endure for long.

The *ranat*, or xylophone, is one of the most pleasing of Siamese instruments. It consists of a crescent-shaped, boat-like body, or sometimes simply an oblong box, supported on a narrow pedestal, with twenty flat bars of hard bamboo or wood, laid side by side across it and suspended on two parallel cords attached to either end of the body. The bars are struck with wooden hammers and have a pure and liquid tone much strengthened by the resonance imparted by the body of the instrument. The bars are carefully tuned by measurement before the instrument is put together and the intervals between the notes are usually very accurate. There are three kinds of *ranat*; the *ranat ek*, *ranat thum* and *ranat lek* which differ from each other only in register. Much care is devoted to the shaping and ornamentation of the body, which is highly polished and often richly inlaid with ivory or mother-of-pearl.

Cymbals called *chap* or *ching*, according to the size, are used in orchestral playing for marking time, as are clappers made of split bamboo. These latter instruments, which call for the exercise of no particular skill, are usually played by ancient females, probably superannuated dancers and singers to whom nothing remains of their former qualifications but an ear for rhythm, and who hide their time-ravaged charms somewhere at the back of the orchestra.

The principal wind instruments are the *pi* (pipe) and *pi-Chawa* (Javanese pipe), clarion instruments used only in orchestral playing and without which no theatrical orchestra is complete. The *pi* consists of an ebony (or other hard-wood) torpedo-shaped body, hollowed out and perforated in six places with finger holes. At one end of the body is a reed mouth-piece made from strips of palmleaf bound together and inserted in a metal tube, and at the other end is a wider tube, also of metal, whence the sound issues. The *pi Chawa* is of similar construction except that it has seven finger-holes and a thumb-hole, while the tube from which the sound issues is broad and trumpet-shaped and is loosely attached to the body of the instrument by means of a cord. The notes of the *pi* and *pi Chawa* are loud and strident, somewhat resembling those of the Scots bag-pipes. The *pi Chawa* is common to Burma and Java as well as to Siam and is probably of Indian origin.

The Siamese flute, or *klui*, is made of thick reed or thin bamboo and is blown from the end in the same manner as a flageolet. It has the same arrangement of holes as the *pi Chawa* clarion, and is usually of a soft mellow tone, for which reason it replaces the *pi Chawa* for concerted Chamber music and in the combination of instruments known as *mahori*. A kind of flute in use amongst the hill-tribes of Southern Siam is played through a hole in the side but the wind is blown from the nose of the player and not from the lips. It is a primitive instrument of no power and small compass and, with its accompaniment of hollow bamboos beaten against a tree trunk and the almost inaudible twanging of a bamboo Jew's harp, constitutes the only music of the Semang tribesmen.

The *ken*, or reed-organ, has been mentioned in the part of the first volume that deals with the Races of Siam. The instrument is common to many of the northern tribes but reaches its highest development

among the Lao, who have made it one of the sweetest toned and most complete wind instruments in the Far East. The usual compass of the Lao *ken* is fourteen reeds, each of which contains a small metal tongue, by the vibrations of which the notes are produced. The breath of the performer is blown into a small body made of the hard fruit or nut known as *luk lamut*, or of some hard wood, through which the reeds are passed, and into which they are fixed with bees-wax. The wind passes into the reeds but does not act upon the metal tongue until the finger-holes, which are pierced in the reeds quite close to the wooden body, are stopped. When a hole is stopped the wind causes the tongue to vibrate and the note is produced either by blowing or sucking. The depth of the tones varies with the length of the reed from which it issues. The reeds are neatly bound together with thin strips of cane. Chords can be produced on the *ken* and one of the deep notes is usually employed after the manner of the drone of the bag-pipes. A very complete account of this exceptional instrument has been given by Warrington Smyth in his book, "Five Years in Siam." With its low sweet tones the *ken* is eminently adapted to the plaintive and fugitive airs so characteristic of the music of Siam. It is one of the few instruments which appeal immediately to the ears of eastern and western people alike, and its gentle tones, which charm the village maidens of Siam to tears, have been heard with scarcely less moving effect in London drawing-rooms.

The stringed instruments of the Siamese are few in number and primitive in quality. The most important of them is the *takhe* (crocodile), so called from a resemblance of the instrument to that animal. In its older form the *takhe* was really shaped in likeness to a crocodile, but in modern instruments the form has been modified into a mere oblong box sometimes ornamented with a very impressionist crocodile's head at one end. The instrument, which is about a yard long,

has three strings passing over a low bridge and eleven frets and is tuned in fifths by means of pegs inserted just behind the head. The bridge stands rather behind the middle of the body which acts as a resonance chamber. The player sits on the ground with the instrument before him and depresses the strings upon the frets with the fingers of one hand while plucking them with an ivory plectrum held in the other. The motion of the plectrum is very rapid and the sound produced is something between that of a guitar and a mandoline, but the notes are buzzy and indistinct. This instrument forms part of most orchestras and is also used for solo playing and for accompanying the voice.

The *saw Thai*, or Siamese viol, has a roughly circular or heart-shaped body of about eight inches in diameter, made of half a coconut shell covered with skin, a pointed foot some six inches long, and a cylindrical neck of about eighteen inches. It has three strings passing over a small bridge planted in the middle of the body and tuned by pegs inserted at the end of the neck. It is played with a horse-hair bow and is held in front of the musician after the manner of the violoncello. The instrument, though often beautifully made, with ivory neck, foot and pegs, is imperfect as to sound. The strings are tuned in fifths and are pressed against the cylindrical neck by the fingers of the left hand to form the different notes, which are not very well defined. The instrument is used only to accompany singing.

The *Saw Sam Sai* a three-stringed, and the *Saw Duang* and *Saw U* two-stringed, fiddles, instruments having a small body and long neck, are probably of Chinese origin but are now always included in certain orchestral combinations of Siamese instruments. Their tone is high and strident and is not pleasing to the European ear.

Occasions for the enjoyment of music are very numerous. In addition to the orchestra of theatrical

companies which perambulate the country and are engaged for private parties or are hired to perform near the market-place of the larger villages, bands of professional musicians attend at the observance of every domestic or religious ceremony, while amateur bands and soloists continually perform for their own delectation or for that of their friends. With the fall of night, more especially when the moon is near the full, the throbbing of drums and the skirl of clarions pervade the air of every town and village, continuing frequently until dawn.

The principal combinations of instruments to form bands are the *Bimbat*, for open-air playing, in which drums and gongs predominate, and the *Mahori*, or string band, in which *Takhe* and various fiddles are the chief element. A certain number of instruments is prescribed for a full band but is by no means always adhered to. On the occasion of a royal cremation and at other religious ceremonies connected with royalty, a very weird and impressive music is produced by a number of small drums and one or two clarions, while two or more *ken*, in combination with stringed instruments make a very effective band for indoor musical entertainments.

The Siamese learn to play European instruments with ease, and in Bangkok there are several military bands which render European music with more or less efficiency. Of late years Siamese airs have been arranged for European instruments and many Siamese military marches of sprightly and pleasing effect have resulted from these efforts.

Long trumpets of a shrill and piercing tone are used on state occasions to herald the approach of the King, and the fanfare blown with a number of these in unison, is striking and very much in keeping with the oriental surroundings in which it is heard.

Being so musically inclined the Siamese naturally cultivate the art of singing. The result, owing to the

numerous conventions which have to be observed, is very different from the European conception of song, and is a good deal more difficult of appreciation by the foreigner than is the sound of even the most peculiar of their musical instruments. The number of professional singers, which of course includes all actors, is very large, while every child is taught, or learns of its own accord, the peculiar plaintive pitch and nasal tones by which the natural voice must be disguised as a first step towards the acquirement of the art. The children also receive initiation into other matters besides sound production, such as the correct attitudes and deportment of a singer, the peculiar pronunciation of some words when sung, and the addition of conventional sounds before and after words coming in certain places, all in accordance with hard and fast rules governing the art. They learn these things the more readily because of the extraordinary dramatic instinct which seems to be an almost hereditary trait in the national character. At the age of about four years the Siamese girl-child is frequently seized with the desire to become a prima-donna, and thereupon proceeds to practise both singing and dancing with the utmost seriousness, and, though her thoughts and wishes are usually directed into other channels as she grows up, the effects of such precocious yearnings are never altogether lost.

The stock repertory of the professional singer consists of verses celebrating the exploits and the miraculous powers of popular heroes of the past, and of love-songs and ballads, but there exists also a great number of simple little songs and choruses, lullabies, boat-songs, invocations and others, with which the people beguile their leisure or infuse spirit into their concerted labours. The amorous feelings invariably find expression in song, and indeed love-making is sometimes carried on by the singing of short couplets in antiphon, in which the swain boasts of his power or

wealth, praises the beauties of his lady-love and pictures the delights of love, while the girl replies with modest words of self-depreciation, with fears of man's inconstancy or with warnings of the trials of marriage. These antiphonal songs are usually learnt from books consisting of long dialogues, which form a large part of Siamese light literature. A favourite form of entertainment, more especially in the north country, consists in the singing of extracts from such works by groups of youths and maidens seated opposite to each other and accompanied by a *ken* or other soft-sounding instrument. The repartee, which is rich in *double entendre*, causes much merriment amongst the onlookers, more especially when, departing from the letter, the parties improvise couplets on topical or personal matters. Singing is taught in the secular schools of Bangkok, and the National Anthem and other patriotic songs are occasionally performed at public functions by thousands of school children singing in unison. Soldiers' marching songs are a recent development in connection with the modern organisation of the Siamese army.

The drama is one of the most ancient and most cherished institutions of Siam, but though the people are passionately addicted to play-going, there existed until lately no truly public theatre in the whole country. Professional players, of whom the number is large, are either strollers who perform in private houses, in temporary sheds or in market places, whenever hired to do so, or are persons permanently retained in the households of the nobility, where they play for the amusement of their master and his friends. From time to time efforts have been made by the nobles to turn their private troupes to pecuniary advantage by admitting the public on payment to their representations, something after the fashion prevailing amongst the English nobility of the time of Henry VII, who licensed their private players to perform in public;

but owing partly to bad management and partly to the fact that the public has endless opportunities for seeing plays for nothing, these ventures are not usually successful from the financial point of view. (The legitimate drama, which is called *Lakon*, is of very ancient, probably Indian, origin, and is so strongly imbued with convention and tradition as to be almost incomprehensible to the spectator who has received no education in the matter.) It has considerable affinity with the Burmese drama, and like it was formerly played in the open air, which accounts for the fact that it is usually on moonlit nights that representations are given. The stage is merely an oblong space, on three sides of which the audience sits while the fourth is reserved for the orchestra and as a sort of green-room and dressing-room where the players dress and make up, and sit to await their cues. In the houses of the well-to-do who have their private stage, this fourth side is sometimes screened off, leaving two entrances right and left, but more usually it remains quite open so that the performers can be seen by the public while going through the interesting operation of changing their clothes. No scenery whatever is used, and the only piece of stage furniture is a dais, or raised seat, placed at the end of the stage just in front of the orchestra and dressing-room, and between the two entrances, which serves as a throne, as a bed, as the interior of a cottage or what not, according as the action of the play demands. The dresses are very gorgeous, but are strictly conventional and quite unlike anything to be seen in modern Siam except in old pictures representing the classical costume of gods and of royalty. (The repertory consists almost entirely of stories from Brahman mythology or of fanciful episodes in the lives of kings of the remote past, and thus the heroes are always either gods or kings, and the heroines usually princesses. The impersonators of all the serious parts are women, but

comic relief is provided by two or three men who, usually dressed as modern peasants, that is in next to nothing, and without any make-up, appear as country bumpkins, or as slaves or servants, and enliven the proceedings with interpolated dialogue only remotely connected with the plot and with buffoonery which is often very clever and usually verging on the indecorous.

The make-up of the women consists of powder plastered on the face until it resembles a smooth white mask, and of strongly-marked black eyebrows and red lips. This covering entirely precludes all facial expression of the emotions ; hence joy, sorrow, pleasure, anger and fear are all expressed by conventional signs. The dialogue, except that of the clowns, is conducted at a high and monotonous pitch of the voice and the singing, which forms a great part of the entertainment, is always slow, loud and of strong nasal intonation. Incidental *pas seul* dances, indicative of love, triumph, defiance and other emotions, are of frequent occurrence, as are concerted *morceaux de ballet* implying the array of armies, the flight of angels, or the peregrinations of errant princesses with their attendant maids-of-honour. Dancing is, in fact, almost the principal feature of the entertainment and an immense amount of time is passed in training the body to the difficult postures and undulations which the art demands. Skipping, tripping, or pirouetting have no place in the Siamese dance, which consists of wreathing the arms with the fingers turned back to the uttermost, swaying and writhing the body and advancing or retiring with gliding motion, the toes turned out widely, the legs bent and the weight of the body on the heels rather than on the ball of the foot. Strange to say, such dancing, when executed by a company of well-trained, supple-bodied girls, is frequently of very charming effect.

The national dancing, which is very similar to that of the Burmese, has itself, apart from the drama, an

immense hold upon the people. Children of both sexes, but more especially the females, are instructed in the art, and though their limbs may not acquire the extraordinary suppleness and double-jointedness which enables professionals to bend their elbows the wrong way and to turn their fingers back over the hand to touch the wrist, yet some proficiency is usually attained, and the pose becomes familiar to such an extent that upon the sudden experience of joy or triumph in later life, the body is almost involuntarily thrown into the attitude of the dance as the most adequate way of expressing the feelings. Lasciviousness of gesture, which is a common feature of Indian dancing, and which to a certain extent permeates the Burmese art, is markedly absent from the Siamese *Lakon* dancing, though among the Lao it is at times not altogether taboo. The *Lakon* is supposed to derive its name from the city of Lakon or Nakon Sri Tammarat, corrupted by the Malays into Ligor, and the supposition is possibly correct, though the two words are now spelled differently in Siamese, seeing that the city of Lakon is one of the most ancient in the country, and was very early imbued with the spirit of Brahmanism, the influence of which is most plainly evident in the drama of Siam.

Another form of Siamese play-acting is the *Yi Kay*, in which, until quite recently, no women took part, all the female characters being impersonated by men. The general effect produced is like that of the *Lakon*, but though the costumes and the incidental dances and music are similar, the repertory of the *Yi Kay* includes many burlesques and farces in addition to the mythological and romantic plays. The players make up for what they lack of feminine grace by a much higher standard of acting, as understood in the West, than pertains to the *Lakon*, but their performances are marred by frequent coarseness of language and gesture, though it cannot be said that



SIAMISE CORPS DE CADETS

these latter characteristics detract from the enjoyment of the audiences, who greet every broad witticism with shouts of laughter. The *Yi Kay* is said to be of Malay origin, and it is highly probable that the idea of plays in which the actors are all men, came to Siam from the neighbouring Mohammedan countries, but its introduction must be of very ancient date for it has long since acquired all the attributes of a Siamese institution, and, except perhaps for the absence of women performers, betrays small sign of a foreign derivation, while even in the matter of the sex of the performers the *Yi Kay*, under the influence of modern taste, is now departing from tradition.

Shadow plays, called *Nang Talung*, that is, *Nang Patalung*, or "The Leather of Patalung," from which place the Siamese appear to have received the institution, constitute a third form of the drama; a form which is undoubtedly of Javanese origin, where, as also in the Malay States, it is extremely popular. A shadow play is given in a small temporary hut erected for the purpose, one entire side of which consists of a white sheet. The audience sits on the ground outside and watches the movement of the shadows cast upon the sheet by figures manipulated in front of a light within the hut. Two operators sit on the floor, one on each side of the light, and have the *dramatis personæ* cut out of stiff leather, arranged on stands beside them. When a character has to enter upon the scene, the figure is taken from the stand and is held before the light by a stick attached to it below the feet, or, if the scene is a long one, is stuck upright upon the soft trunk of a banana tree laid along the floor just behind the sheet. The principal characters have practicable lower jaws and arms which, during the endless dialogue which forms the greater part of the entertainment, and which is spoken by the operators, are worked violently up and down, thus providing the chief movement and action of the play. The perform-

ances are accompanied by a band composed entirely of cymbals and gongs, are nearly always stories from Brahman mythology, and, though to the uninitiated they may seem the acme of tediousness, afford evident pleasure to the large audiences which flock to see them and remain seated under the starlight in perfect content the whole night through, until the coming of dawn puts an end to the play. The stiff leather figures are made with great care and, though no more than their shadow appears to the public, have the details of costume, jewellery, etc., skilfully painted upon them. A good deal of superstition centres round them, and manipulators never use a figure representing an evil spirit without previously fortifying themselves with charms against the harm which might be incurred by handling it.

The shadow play is sometimes used in Southern Siam to exorcise evil spirits which have brought disease into a house or village. A play is selected in which a particularly powerful malevolent spirit takes the leading part. The spirits of the sickness are supposed to be attracted to watch the movements of one whom they recognise as their superior and the scene towards the end of the play (when, the shadow curtain being drawn aside, the leather puppet, violently agitated by the operator who appears as one possessed, is supposed to entice the spirits into a specially prepared trap amid the shouts of the excited audience and the firing of guns), forms one of the strangest exhibitions of superstition and credulity that can be imagined.

During the last twenty years, an influence has been at work which has created a new development in the histrionics of Siam. This is the growth, side by side with the classic tradition, of a vigorous school of acting based on the principles of the dramatic art of Europe, due apparently to the theatrical tastes and aspirations of youthful amateurs returned from residence abroad. The earliest manifestations of the new departure

took the form of amateur performances in English by the aforesaid youths. These in time drew the attention of the professionals and quasi-professionals, hitherto exponents of the traditional school only. Soon the translator and the adapter of foreign plays were hard at work, and it was not long before representations of the new art, known as *Lakon Poot* or 'Spoken Play,' became recognised forms of popular entertainment. Early in the new century a real public theatre constructed on the European model was inaugurated, in which, twice a week, the playing-women of a Princely household performed pieces, translated from the English or French and adapted to Siamese life and to the Oriental point of view, with a cleverness and an energy that brought the enterprise into immediate and wide popularity. Imitators soon appeared with theatres hastily constructed to meet the new vogue, which grew as the public warmed to the novel diversion, until it usurped the position of the legitimate classical Drama in the estimation of the upper classes and of the capital, though amongst the country folk it found little or no favour.

The new art, being without tradition and, notwithstanding its popularity, foreign to the instincts and subversive of many ideals of the people, very soon began to exceed the bounds of restraint, and seemed destined to become the source of much evil before destroying itself, as it must inevitably have done, by excess of extravagance and irresponsible folly. It was, however, rescued and preserved for better things by the active intervention of the King. His Majesty had made a close study of the Drama of Europe and in early manhood had already shown himself to be both an actor and a playwright of very considerable parts. When, therefore, the new development captured the upper classes and seemed about to run away with their discretion, he was able not only to check the evil tendencies of the movement by an expression of

his will, but also, by actual work and example, to guide the public taste into better channels and to indicate the methods by which the foreign stage might be adapted to provide a true portrayal of Siamese thoughts and emotions and to uphold the sound ideals of the nation. His Majesty went further, for he made use of the theatre to cultivate in his people such of the better qualities of mankind as he found under-developed in them, and in the furtherance of this crusade he has written and adapted and produced in his own royal theatre and elsewhere, innumerable plays of sound construction and healthy vigorous tone.

At the same time the King has not allowed the classical theatre to fall into neglect. The company of His Majesty's players is large, comprises the first legitimate talent in the country and performs frequently at the Theatre Royal, when the time-honoured plays of the country are presented with skill and magnificence hitherto unknown to this peculiar form of the dramatic art.

The Cinema, called *Nang Yipoon* from the facts that the first films shown in Siam were due to Japanese enterprise and that the entertainment was considered to resemble the *Nang Talung* or classical shadow play, has diverted a good deal of attention from the national theatre, for not only is Bangkok now furnished with half a dozen pretentious moving-picture houses, but every town or village of any size or importance can boast of its 'film-palace,' usually a precarious erection of cheap planking and corrugated iron. Siamese films are still a development of the future, so that townsman and country bumpkin alike are regaled with the output of Los Angeles and other foreign centres of film-production, and have long been equally familiar with the beauty of Miss Pickford, the antics of Monsieur Linder and the absurdities of Mr. Chaplin; while in the far interior, the people base their theories of the white man's life and ethics upon the crook and cowboy phantasmagoria that are unrolled nightly for their edification.

PART III.

RELIGION.

(PRACTICALLY all the people of Siam are Buddhists. True, many other religions are represented in the country but the number of adherents of these does not amount, taking them altogether, to more than a small part of the total population.) Of those primitive people who may be classed as spirit worshippers, there are perhaps a quarter of a million ; the people of the Malay provinces are mostly Mohammedans ; Chinese Confucianists are to be found in colonies here and there ; the dwellings of a few Christians cluster round the habitations and churches of the Missionaries, and in one small district Brahmanism still obtains in its ancient forms. None of these religions, however, are gaining ground, their influence is practically unfelt and their very continuance in the land is due solely to the extraordinary spirit of tolerance which Buddhism inculcates in its followers.)

During the 2,465 years which have passed since the Buddha lived on earth, his teaching has had an enormous influence over the greater part of Asia, of the population of which continent nearly two-thirds, or over 500 millions of men, now follow, in one form or another, the "Teacher of the Law." It is not to be expected, however, that so great a section of the human family can be found undivided on the vexed subject of religious faith, and Buddhism is split up into branches and sects without number, the members of which regard each other with a rancour second only to that which seems to animate some Christian sectarians.

The beginnings of Buddhism were in the country immediately surrounding the city of Benares in India,

which, as the scene of the birth, teachings and death of the Buddha, constitutes the Buddhist Holy Land. The religion spread rapidly all over India, up into Central Asia, through Tibet, into China, Koréa, Japan, Mongolia, and Manchuria, and down to Ceylon and thence to Sumatra, Java, the Malay Peninsula and Further India. Later, Buddhism disappeared from India, being put down by the Brahmans, and from Sumatra, Java and the Malay Peninsula where it was replaced by Mohammedanism. But, though the trunk has disappeared, the two main branches, called Northern and Southern Buddhism, continued to flourish exceedingly, the Southern branch, which represents the school most nearly approximating to the actual teachings of the Buddha, having its present home in Ceylon, Burma and Siam. Partisans on each side hotly maintain the superior purity of the national religion of those three countries as opposed to each other. The differences are, however, minute and of absolutely no importance when compared with those which divide the Northern from the Southern Buddhists, and with others which split the Northern branch into schisms so broad as to constitute, to all appearances and to most intents, totally distinct religions.

Every Buddhist country possesses its versions of the Life of the Buddha, and also its mass of legend connected therewith, somewhat at variance with each other in detail but not much so as to the main points. The work *Pathomma Somphotiyan*, or the 'Highest Utter Omniscience,' is probably the Siamese version of the Life best known to the outside world, owing to its having been translated by Alabaster. It is incomplete but, so far as it goes, is very close to the Burmese and Cingalese versions and consequently may be taken as a fair rendering of that generally accepted by the Southern Buddhists.

According to this version the Buddha, called in Siam, Phra Phutthi Chao, and also Somona Kotom

from 'Somona,' an ascetic, and 'Kotom,' Gotom or Gautama, the name of the Kshatriya Clan from which he came, was born in the year 623 B.C., of Maya, the wife of Suddhodana, king of Kapilawat, identified as the modern Nagar Kus, not far north of the city of Benares. The legend has it that the conception of Queen Maya was immaculate, that signs and portents were numerous on the occasion of the birth, and that a marvellous future was predicted for the child either as a "Chakkrawartin," (a world-conquering warrior and universal monarch), or as a Buddha. The name of the child prince was Sithat (Siddhartha), and he was brought up as a member of the warrior caste, Kshatriya, and educated to succeed to the throne. He was married early, and led a normal existence until he had reached the age of twenty-nine years when he suddenly gave up the pleasures and comforts of his life, renounced his royal position and his wife and child, and departed into the wilderness in search of religion. There he gave himself up to an asceticism so severe, and to meditations so intense that, in six years from the date of this Great Renunciation, he had acquired a reputation for saintliness far surpassing that of all other ascetics, who were at that time very numerous in the land. Then, however, when nearly dead from starvation, he realised that he was on the wrong path and that not by asceticism alone would the truth be revealed. He therefore broke his self-imposed rules, and thereby lost his saintly reputation. His friends and followers deserted him, and he was left to wander alone in a state of uncertainty as to whether, after all, any way of light existed and whether he was not as near wisdom when in his father's palace as in his present condition. At length seated, weary and heart-broken, in the shade of a tree, the Ficus Religiosa or Bo-tree, ever after to be regarded as the Sacred Tree of Wisdom, he was assailed by the temptation to give up the struggle and go home, but just as worldly desire

seemed about to conquer, there burst upon his intellect the glorious light of everlasting truth, the whole of his Philosophy was revealed to him in a flash, all worldly thoughts and temptations fell away for ever, and his mind came forth that of a Buddha, beyond the reach of sorrow as of joy, clear, pellucid and omniscient. Thereupon he left his seclusion and, for forty-five years, wandered over the earth teaching the Law with which he found himself inspired, and ultimately died at the age of eighty.

In the life it is stated that Kapilawat was a great and powerful kingdom, that the Buddha visited the whole terrestrial world and parts of the heavens in the course of his wanderings, and that had he not become a Buddha he would in just ten days after the date of the Renunciation have become a Chakkrawartin. These are examples of a natural exaggeration which characterises the greater part of the 'Life.' Kapilawat was, in fact, the inconspicuous territory of a petty Raja. The Buddha was at first no more than one of a great number of ascetics at that time engaged, by means of self-torture and self-repression, in attempting to penetrate the mysteries of existence, and his wanderings were confined to a part of Central India. Nevertheless his teaching caught the popular imagination as that of no other anchorite had done, his fame spread in all directions, he became a power amongst the surrounding chieftains, and when he died, the Order which he had founded and which had already become a numerous body, was taken under the protection of the most powerful of the local Rajas, King Ajatasatru of Magadha.

Less than a year after the death of the Buddha, the first Council of his Holy Order was held at Rajagriha under the auspices of Ajatasatru, when 500 disciples who had attained the dignity and powers of full monkhood, chanted the whole of the teachings of the Buddha as afterwards written down in the Trai

Pitok (Trai Pitaka), or 'Three Baskets,' the Scriptures of the Buddhist. The first 'Basket' or Rules of the Order, *Phra winai* (Vinaya) was led by the disciple Upali, the second, Sermons for the Laity, *Phra Sai* (Sattrā), by the disciple Ananda, and the third, Philosophy, *Phra Baramat* (Abhidharma), by the aged Kasyapa, one of the original members of the Order. The Siamese generally suppose that the *Trai Pitok* existed then, either in writing or in the memory of the monks, in their present form, but such, of course, was not the case, since many parts bear evident marks of composition at a much later time. Certainly they had not been written down at that early date, for various records prove conclusively that they were first reduced to writing in Ceylon by order of the King Watta Gamini about 330 years after the death of the Buddha.

One hundred years after the Rajagriha Council, the first great schism occurred when, as the result of a further Council, the Northern and Southern sects arose. In the third century B.C., the King Asoka, monarch of Maghada, which had now become a powerful kingdom, became a devout follower of the Buddha. With a view to purifying the religion, he convened at Patna a great Council of 1,000 monks who deliberated during nine months, at the end of which time the Rules of the Order and the Doctrines of the Faith had been again rehearsed and settled. Asoka caused Edicts to be cut in stone and set up in various parts of his kingdom, which Edicts, discovered and deciphered in recent times, reveal his interpretation of the Law as an infinitely purer and more simple creed than centuries of metaphysical ponderings and the introduction of complicated ceremonies and ritual afterwards made it. A great part of the *Trai Pitok*, including the whole of the 'third Basket,' finds no place in the Edicts, which display a spirit of tolerance and a simple righteousness, inculcating obedience to parents, kindness to children and the lower animals, indulgence to inferiors,

reverence towards Brahmans and towards the Members of the Order ; suppression of cruelty, anger, passion and extravagance, the cultivation of humility, tolerance, and charity. The Edicts contain nothing of the hypothetical deities and metaphysical beings with which modern Buddhism is saturated, and very little of Nirvana, and the Chain of Existence, but are a straightforward rendering of a singularly beautiful and simple religion, urging mankind to the performance of good deeds, and promising an easily understood reward in the blissful semi-human existence of the Lower Heavens or *Sawan*.

The Buddha having by long asceticism and meditation become convinced of the Four Great Truths, namely, that sorrow ever attends existence ; that the cause of sorrow is desire ; that with the extinction of desire must come cessation of sorrow ; and that by holiness alone can desire be extinguished ; set himself to teach the renouncement of all worldly desire and bodily pleasure and the attainment of a mental state which would cause mankind no longer to hanker after existence but to aspire to a perfect state of rest or nothingness. That so long as the smallest desire continued, the burden of existence and its attendant sorrow must continue in a ceaseless round of death and rebirth, either in this world or in some other. That by accumulation of the merit of good works or of the demerit of evil living, the amount of sorrow might be decreased or increased by temporary abode in one or other of numerous states of comparative bliss or of pain and unhappiness, accurately graded to suit every condition, but that only by walking rigidly in the eightfold path of most perfect holiness could the chain be broken and annihilation attained. The reward of nothingness was made the more difficult by the fact that, except in very rare cases, it must be preceded immediately by a final life in the terrestrial world in a superlative state of previously accumulated merit,

which should synchronise with the early life of a future Buddha who would act as guide to Nirvana for such of his contemporaries as should be in a fit condition to reach it.

Such a law, aiming at nothing less than the extermination of all existence, must of course be practically beyond the power of mankind to follow, and it is probable that, but for the humanising influence of the interpretations of Asoka, the philosophy of the Buddha would in time have died out as so many others have done. Asoka, in fact, erected upon the foundation of an abstruse philosophy the skeleton, as it were, of a practicable, popular religion, a simple teaching of right and wrong with an inducement to righteous living. The subsequent accumulation of mysticism and miracles, ritual and ceremony, the work of later exponents whose love of the marvellous has appealed successfully to human credulity and superstition, finds its parallel in at least one other religion the tenets of which are now far removed from the simple teaching of its Founder.

The Buddha did not teach the existence of any God and made no attempt to solve the mystery of the Beginning of Things, while of the End, or Nirvana, he had nothing very definite to say. His supernatural intellect could grasp the idea of a universe without any beginning, and of an end in sheer nothingness, but mankind with its narrow limitations must have a God, an ultimate Court of Appeal, to whom supplication can be made; must have its Beginning and its End, its Heaven to reward the virtuous and its Hell for the punishment of the wicked, and hence, long after his death and that of the simple-minded Asoka, a partial deification of the Buddha himself and the annexation of Brahmanical superstitions and Brahman divinities provided Southern Buddhism, as understood to-day by the masses of the people who follow it, with a Deity, a Celestial Hierarchy and several

Heavens and Hells of the completest and most realistic description.

Siamese Cosmogony. The Siamese conception of the Universe is drawn from the pages of the *Trai Phum* or 'Three Places,' namely the Earth, the Heavens and the Hells, a gigantic work of sixty volumes, compiled by Royal Command in the latter part of the eighteenth century, and setting forth, amongst other matters, the Buddhist cosmogony as contained in former classic writings and in the legendary lore then available. There is no attempt therein to explain a Beginning of Things, but a start is made with the announcement that the whole of space is, and has ever been, occupied by an infinite number of cosmic groups, all alike and each one containing a world of men with heavens and hells and also other worlds inhabited by more or less manlike creatures. These groups are continually, though at immense intervals of time, being destroyed in rotation by fire, water or wind, and are as continually being formed again by reason of the gradual reappearance of imperfections amongst the all-but-perfect formless Brahman angels, the recrudescence of earthly desires in whom causes also the reappearance of the conditions and adjuncts of material existence. Each group, which is called a *Chakrawan*, surrounds a central mountain, the *Phra Men*, or Meru, and consists of eight belts of ocean divided from each other by seven circular mountain ranges, with an eighth ring outside of all named the Crystal Wall of the World. In the outermost belt of ocean are situated four groups of islands, the southern group constituting the world of man and the other groups forming worlds peopled by square-faced, semi-circular-faced and round-faced beings, more or less human. On the mountain belts and on the central *Phra Men* are situated six lower heavens where those who have practised virtue and charity as men may hope to be born as angels and to lead an existence

attended by every sensual pleasure for a period which may extend to hundreds of millions of years. Above the lower heavens are nine stages, infinitely subdivided, the heavens of the Brahma angels, beings without sex or intestines, who have shed all earthly senses except those of sight and hearing and who exist in a state of extreme beatitude for twenty-six thousand *kap*, a *kap* being some millions of millions of years, before the merit accumulated by terrestrial asceticism and contemplation is exhausted. Above the sexless angels again are the four highest heavens where the formless angels (*Arupaphom*), invisible essences of six kinds of happiness, exist for periods almost infinite, in the expectation of Nirvana.

Beneath the earth, at a distance of a hundred miles, is situated the uppermost of the 5,120 Hells in which every conceivable form of suffering is dealt out to those whose demerit when in the world has exceeded their merit. The *Trai Phum* enumerates at great length, and with gruesome detail, the punishments which have been devised to fit every crime, and which continues until the demerit has been wiped out and the spirit at last achieves rebirth. The makers of demerit do not all go to hell, however, for many are reborn at once, or rather are reprecipitated, as animals without intelligence, or as *Préta*, a kind of poor wandering ghost, twelve miles high, so thin as to be invisible, and afflicted with never-to-be-satisfied hunger and thirst. Large numbers of people become *Phi*, immaterial beings attached to Earth and strongly interested in the affairs of man, dangerous beings, moreover, and mischievous, and requiring constant propitiation by man to keep them in even partial quiescence.

The whole of this great system of Earth and Water, Heavens and Hells, rests on a vast sea in which huge fish disport themselves, causing earthquakes by their more violent movements; and this sea again is supported in space by a mighty wind. At the foot of

Phra Men dwell the gigantic *Khrut* (Garuda) birds, constantly at war with the *Nak* (Naga) or serpent people who live in the world of men but underground.

The mass of the people know little or nothing of the *Trai Phum* but glean their knowledge of the Universe from ancient stories of Himaphan, the fairy-land which occupies a large part of the Brahmano-Buddhist conception of the world, whence, doubtless, comes the name of the Himalaya mountains. Also from the sermons of the monks and from realistic pictures of the delights of heaven and the pains of hell which they see on the walls of every temple. Among the educated classes it has long been denied that the *Trai Phum* contains the teachings of the Buddha or that it is anything more than an elaborate fabrication raised by generations of meditative friars upon a foundation of Brahman legend. The philosopher whose thoughts were introduced to the public in Alabaster's most excellent book, "The Wheel of the Law," as the views of a Modern Buddhist on his own and other people's religions, points out that the Buddha carefully avoided the subject of cosmography and supposes that although, being omniscient, no secrets of the Universe were hidden from him, he refrained from enlightening the world on the subject because he did not wish to disagree with the Brahmins in whose Vedic writings most of the theories (afterwards incorporated in the *Trai Phum*) were already included.

Introduction of Buddhism and Brahmanism into Siam.
(Buddhism early found its way from India into China and thence Northern Buddhism was brought down into Siam by wandering Lao-Tai tribes probably at a date prior to the beginning of the Christian Era. About the same time the fruits of the first Buddhist mission sent to the shores of Further India by Asoka about 250 B.C., were becoming visible in the spread of the Southern form of the religion through the Malay

Peninsula, Burma and the Southern parts of Siam, where it soon drove out and supplanted the Northern cult. Evidence from various sources, which has been carefully collected and tabulated by Gerini, seems to show that Southern Buddhism was firmly established throughout Indo-China as early as the fifth century A.D., about which period a further great mission from Ceylon gave additional impetus to the religion and fixed it finally as the prevailing faith of that quarter of the world. At that time the ancient Brahmanistic Nature and Spirit worship, from which Buddhism was itself a schism, was already established in the land as the religion of the ruling class, while the great majority of the people were animists pure and simple, and worshipped the spirits of the mountains, the rivers and the trees as well as a host of others.

(In considering the subject of Religion in Hindustan and Further India it is well to remember that the spirit of intolerance of other creeds, so strongly manifest in Christianity and Islamism, has usually been remarkable for its absence there.) At the period when the Buddha lived, though the Brahmans had built up an enormously strong religion in India of which they themselves were at the head, any man was apparently free to indulge his own theories concerning spiritual matters, and new philosophies were continually being evolved, which, so long as they recognised the superior worldly condition of the Brahmans, were allowed to flourish unchecked and were frequently accepted in the accommodating minds of the people together with their substantive beliefs. The Buddha himself, while teaching a Law diametrically opposed to Brahmanism, was careful to advise an attitude of respect towards the Brahmans, and it was only when the strength and arrogance of his followers had caused this precept to be forgotten that the Brahmans, in defence of their intricate and sacred caste system and of their own position of paramountcy, inaugurated the persecutions

which banished Buddhism from India and left the way clear for the full development of Hinduism.

The present day inhabitants of the mountainous regions of Further India, modern exponents of the elementary spirit-worship once common to the whole peninsula, are not above soliciting the prayers of foreigners when their own sacrifices and incantations prove unavailing, and nearly always adopt the religion of their Buddhist neighbours when, by a turn of fortune, they are raised from their native condition of savagery to civilising affluence. It is not difficult, therefore, to imagine how easily the early inhabitants of Siam accepted the new religions, Brahmanism and Buddhism, either alternately or possibly simultaneously, when brought to them by civilised and superior men from foreign lands, or how, as they prospered and themselves became civilised, they found it easy to accommodate the two creeds and to extract from each what most appealed to them, grafting the result upon the stock of their ancient beliefs and superstitions. It was thus that a strange composite religion grew up and spread throughout Kambodia, Siam, and Burma, in which plain witchcraft with its attendant phallic, tree and serpent worship, Brahmanism or glorified spirit-worship with its elaborate mythology and its imposing ceremonies, and Buddhism with its Four Great Truths and its admirable precepts, became inextricably mingled. By slow degrees Buddhism came to predominate in this conglomeration of creeds. The Monastic Order took firm root in the country, and, as the centuries passed, the cosmogony, more or less in consonance with Buddhist theories, which has been briefly outlined above, was shaped, in which all sorts of dragons and dryads found places, while the gods of Brahmanism, bereft of their divinity, fell into the position of mortal or semi-mortal beings in various states of transmigration and occupying stations in the different Heavens of temporary bliss or in the Hells

of pain and woe. In the ruined temples and time-worn relics with which the whole country is strewn, the ancient co-existence of Brahmanism and Buddhism, and also the gradual supplanting of the former by the latter, can without much difficulty be traced. Upon the sites of the oldest cities, Sukhothai, Sawankalok, Pitsanulok, Sri Wijaiya and countless others, bronze statues of the various Brahman gods are found mingled with images of the Buddha. In the less ancient ruins, such as Ayuthia and Wieng Chan, such relics of Brahmanism are almost entirely absent while remains are exceedingly numerous. Finally in the modern cities, with the exception of Nakon Sri Tammarat and the neighbourhood, where Brahmanism still holds its own as a distinct religion, and in one temple in Bangkok which is the headquarters of the Court Brahmins, representations of the Brahman gods are rarely seen or, if present, are relegated to quite subordinate positions as attendants on, or adorers of, the Buddha.

SIAMESE BUDDHISM.

In the life of the modern Siamese man the practice and the observance of religion play a very important part. In the vast majority of cases he becomes when a boy either an inmate of, or a daily attendant at, the monastery of his village, where he receives from the monks an elementary education embracing the three 'R's' and the rudiments of the Buddhist Faith. Later on, when a young man, he seeks admission into the Holy Order, an observance incumbent upon the whole male population, and becomes a monk for a period of three months or as much longer as he may desire. When he returns to lay life it is with a knowledge of his duty as a good man, to honour the Buddha, the Law and the Order, a duty which entails periodical visits to the temple to hear sermons and to recite

doxologies. It further implies readings of the Holy Scriptures during the months of Wasah, the rainy season ; the daily contribution of food to the begging bowls of the monks ; and the presentation of special food, clothing and other objects at the monasteries on the many occasions set apart for this purpose. Furthermore he has had impressed upon his mind and has been compelled rigidly to obey, for a time at least, the five principal Commandments, obedience to which is incumbent on any good man whether cleric or lay, namely not to destroy life ; not to obtain the property of another unjustly ; not to indulge the passions ; not to tell lies ; and to refrain from all intoxicants ; while he has been made acquainted with the lesser five imposed upon the monkhood and, though advisable for the laity, not absolutely necessary for their salvation. During the years of strenuous life the precepts of religion are apt to be forgotten and, so far as is possible, the necessary observance are left to his women, who perform them with the utmost devotion, but, when old age comes upon him, he usually turns to the consolations of his Faith, becomes punctilious in the performance of his religious duties and ends his days in the practice of holy meditations and in the fervent repetition, with the aid of a rosary of beads, of endless formulæ which take the place of prayer, the object of which is to divert the mind from mundane things and to direct it to the calm contemplation of approaching dissolution.

It is not easy to understand exactly what is the Siamese conception of the soul, or rather that part or essence of the being which forms the link of identity between one state of existence and another. The Buddhist Philosophy altogether denies the existence of the soul as understood or imagined by Christians, but maintains that upon the death of the individual everything that constituted the ' self ' of the individual is dispersed, broken up and annihilated, and that

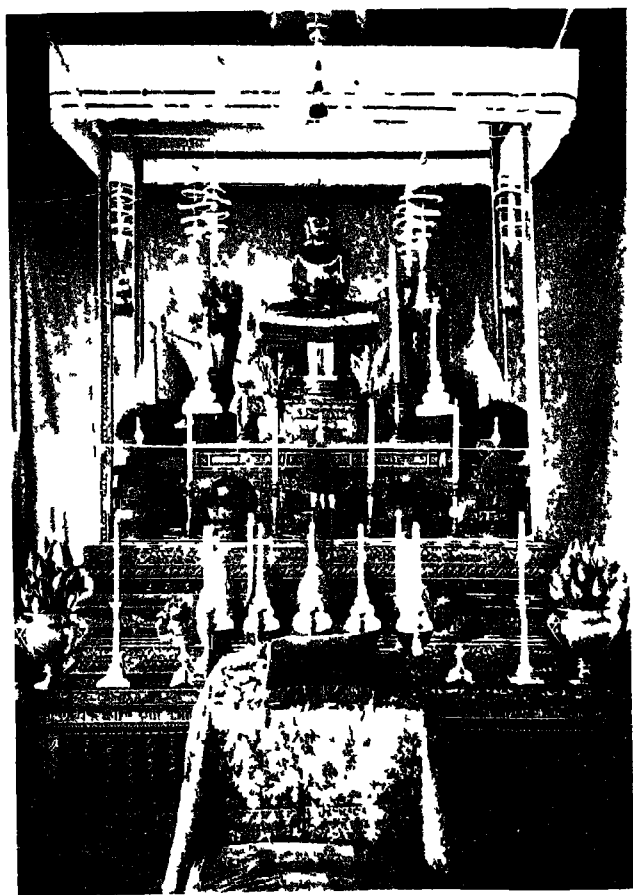
nothing remains except the merit or demerit accumulated during the existence of the individual, to the making of which every act and thought of the life which has passed has contributed, no matter how trivial or grave such act and thought may have been. It is supposed that this abstract quality of merit or demerit, called *Kahm* (Karma), being dissipated at death, is reprecipitated to form the next link in the chain of existence, the nature and condition of that link being decided by the kind and degree of the *Kahm*. This abstruse metaphysical doctrine, the ordinary Siamese, however, does not appear able to grasp, or if he does so his mind, recoiling from the idea of such complete suppression of identity, rejects it in favour of the theory of a much more material essence which passes from being to being along the chain of existence, retaining some ever-so-slightly connected identity throughout, whether the transmigration be from man to man, or to beast, or angel, or devil, or to one of the (usually) invisible beings, *Phi*, which we translate as 'Spirits.' This theory gains credence from numerous cases, of course said to be authenticated, which come to light from time to time, of individuals being born with distinct recollections of former existence, remote or recent, as men, as lower animals and so forth.

The Siamese has no turn for metaphysics, and there are probably very few men in the country, other than monks, who ever bother themselves about the nature of *Kahm*. Alabaster's "Modern Buddhist" sets out to explain the whole matter but, having got himself hopelessly off the track and confused by sheer inability to get away from materialism, breaks off suddenly with the wise remark that "To dwell on the subject would be tedious."

The average Siamese layman, in fact, appears to regard his future existences as very much continuations of 'Self.' He trusts that he will always have

enough merit to avoid the more painful hells, and to escape the inclusion in his career of the life of a draught-ox or other long-suffering beast, and he hopes either for rebirth as a man in better worldly condition than the present, or for a few million years of rest amid the pleasures of one of the Lower Heavens.

The Monkhood. Almost the first thing taught to any child of Siamese parents is the recitation of the formula, "I revere the Buddha, the Law and the Order," the fundamental profession of the Buddhist Faith. The third of these objects of reverence is the Monkhood, of which every adult male individual of the whole population has at one time been, or actually is, a member. The monks are those who have bound themselves by oath to eschew the vanities and wickedness of the world, to live apart from their fellows, and by the practice of many austerities, the cultivation of humility and by deep and prolonged meditation, to acquire merit and so advance themselves on the steep and difficult path which leads through countless existences to Nirvana. The monks of Christendom and of Buddhism, who have many points in common, differ in this, that whereas the devotions of the former are for the benefit of mankind, those of the latter are inspired by the desire for their own individual benefit. The difference, however, though apparently great, is in fact not so, since the Christian Monk by his sacrifices, prayers, and good works on behalf of his fellow-creatures, hopes to assure, incidentally, his own future beatitude, while the Buddhist in advancing himself on the ladder of existence, decreases the sum of universal sorrow, and in the pursuit of personal merit acts as teacher and guide to those around him and affords them endless opportunities of accumulating merit for themselves by the exercise of charity and reverence towards him. Thus by different methods, and for opposite reasons, both achieve the same ends, namely the working of good to their fellow men and



A DEDICATORY ALTAR



PHRA IODONG OR MONKS, ON PILGRIMAGE



PHRA IODONG RECEIVING AIMS
(The umbrellas are used as tents)

the assurance of their own happiness in a future state of existence.

In the beginning, the Buddhist monk was a wandering mendicant pure and simple who, having given up the world and all worldly possessions, clothed himself in cast-off rags, yellow from age and dirt, and wandered from place to place, begging his food and sleeping under such shelter as trees and caves afforded him. On the approach of the wet season the pious inhabitants of the locality where he happened to be, would build him a small hut on the confines of their village, and here he would stay, preaching sermons and expounding the Law in return for their alms, until the end of the rains enabled him once more to take the road. It would seem, however, that the monastery system replaced the homeless life at a very early date, for the people, urged by their piety and by the necessity for making merit, replaced the temporary huts by permanent structures and invited the monks to make them their fixed places of abode, to which, however far they might wander during the dry weather, they would return for the season ordained by the Rule as their period of rest. Thus, out of the rude huts of ancient days, grew the great and frequently magnificent monasteries with their numerous inmates and complicated rules, which grace every Buddhist country and of which Siam has her thousands like the rest.

The Siamese monks, though comfortably housed and surrounded by pious supporters, take full advantage of the travelling rule, and large numbers of them wander all over the country and visit the notable shrines and sacred places in their own and other Buddhist lands. Parties of such pilgrims, who are known as *Phra Todong*, are to be met with at any time and place during the dry season, marching, each monk accompanied by an attendant boy bearing the scanty necessities of the journey, across the open lands and through the jungle from place to place, or camped

beneath their little tents formed of white cloth thrown over a large umbrella on the dry, cracked rice fields, where they receive the alms and permit the reverence of the country folk.

The hierarchy of the Church, at the head of which is His Majesty the King, is very distinctly defined and has existed, subject to occasional modifications to meet specific requirements, from the earliest days of Buddhism in the country. The active chief of the Order is usually a *Sangkhharach* or Prince of the Church, selected by the King from among four chief Abbots, *Somdet Phra Chao Rachkana*, or more briefly, *Chao Kana Yai*, who, themselves, are selected from the Abbots of the numerous Royal *Wat*, that is, temples founded and supported by Royalty. The *Chao Kana Yai* control the four principal divisions into which the Order is divided, one having charge of ecclesiastical affairs in the northern half of the kingdom, another of those in the south, a third of the *Kana Chammayutika* or the brotherhood devoted to the purification of the faith and the simplification of its observances, while the fourth is the head of the hermit monks, formerly numerous but now much reduced in numbers and importance, who, for the better observance of humility and asceticism, live not in monasteries but entirely apart in the solitude of the jungle. Each *Chao Kana Yai* has an assistant or deputy, and under provisions of an Ecclesiastical Law passed in the year 2446 of the Buddhist Era (1903 A.D.) the whole of these eight dignitaries constitute an Assembly to which all general questions affecting the religion are submitted for settlement and which also acts as a Final Court of Appeal in cases coming under the ecclesiastical jurisdiction. In accordance with the provisions of the above mentioned Law, a number of lesser dignitaries are appointed having jurisdiction over the Monks and the *Wat* in areas corresponding to the civil divisions of the country. Thus one individual





A MONK.
(*Maha Barien*, with Insignia of Degrees of Learning.)

with the title of *Chao Kana Monton* has general charge in each *Monton* or High Commissioner's Circle, while under him is a *Chao Kana Changwad* for each *Changwad* or Province, in the Circle, who in turn controls the *Chao Kana Kweng* or the ecclesiastical heads of the districts comprised within the *Changwad*. Lastly there is the *Wat* or Monastery, with its Principal Monk or Abbot, its monks, its *Nane*, or novices, and its *Sisya*, or boys living in the *Wat* either in attendance on the monks or for the purposes of education. The number of monks in the whole country is about 120,000, of *Nane* 40,000, and of *Sisya* 75,000. These are distributed in upwards of 8,000 *Wat*. The Abbots of monasteries and the dignitaries of higher degree are usually selected from amongst those monks who have passed through the nine grades of proficiency in the Pali language, the *Trai Pitok* (the Siamese edition of the *Trai Pitaka*) and the Commentaries, an achievement which entitles them to the prefix *Maha Barien* before their names and to the possession of certain utensils, a fan, a spittoon, a teapot, etc., all of a special kind, which are presented with due ceremony as insignia of the various degrees of knowledge attained.

There exists also an Order of Nuns of which the foster-mother of the Buddha is said to have been the first member, in which women can seek a refuge from the world and follow the Rule of the Order so far as their inferior state of existence allows. The members, called *Chi-Song*, are few in number, however, and consist chiefly of ancient dames who have long outlived the temptations of the flesh and who have no relatives to support them. They have no convents, and on the rare occasions when they are met with are usually found located in little huts on the outskirts of a monastery.

The Church in Siam as at present constituted enjoys a considerable income from lands which have been presented as endowments (*Ti Torani Song*), or the receipts from which are devoted by the owners to the

support of a particular *Wat* (*Ti Kalpana*). The Government revenues derived from certain lands (also called *Ti Kalpana*) are permanently devoted by order of the King to the support of the Church.

The ordination of a Buddhist monk is an impressive ceremony. The preliminaries have already been noted in Part II. Upon entering the *Wat* accompanied by relatives and friends, the candidate finds himself before the Abbot, who is seated in front of the great image of the Buddha with his attendant monks grouped around him and all wearing the inscrutable and grave expression of reposeful meditation which is characteristic of the Order. The candidate seats himself upon the floor opposite the Abbot, while the congregation arranges itself, also sitting on the floor, on either side of him. Presents are then humbly offered by his relations to the monks, and a sponsor, leading him to the feet of the Abbot where he prostrates himself three times, presents him as a supplicant for admission to the Order. The Abbot thereupon solemnly catechizes the candidate as to his mental and bodily condition. The candidate, having made satisfactory replies to all questions, again prostrates himself with hands joined in the attitude of prayer and implores to be taken from the wicked world and received into the fold of the Church. Thereupon the name, age and condition of the candidate are entered in a register, the robes and paraphernalia of a monk are brought forward and the candidate is publicly stripped of the gala costume in which he has presented himself and is clothed by attendant monks in the holy yellow garments. The begging bowl is slung over his shoulder, the fan is placed in his hand, and thus habited he kneels once more before the Abbot and the sacred image towering behind, and repeats so that all may hear :—

“ I go for refuge to the Buddha.”

“ I go for refuge to the Law.”

“ I go for refuge to the Order.”

Then, speaking after the Abbot, he takes upon himself the ten vows, to destroy no life of any kind, not to steal, to abstain from impurity, not to lie, to abstain from all intoxicants, not to eat at forbidden times, to adjure dancing, music and all similar worldly delights, to use no scents or personal ornaments, to touch no gold, silver or money, and to sleep only on the ground or on a low and narrow bed. The Abbot then announces publicly that the candidate is received into the Order, and recites the list of duties which he must perform and of sins which he must avoid. Thereafter the parents, relatives and friends of the newly-ordained monk prostrate themselves in turn before him, at the same time offering him such small presents as he may receive without sinning, and, having done this, leave him to take up his abode in the monastery where he must remain thenceforth, or until he may ask to be relieved of his vows and to return to the world.

European writers of the class that, ignoring local customs and surroundings, consider the chewing of betel or the smoking of a cigarette as incompatible with a reverent or respectful attitude of mind, have described the ordination ceremony as marred by the callous levity of the attendant congregation. In truth, however, the occasion is usually marked by entirely decorous behaviour according to Siamese standards, and though here and there a girl may titter or a man greet a friend with a smile and a remark, the grave countenances of the monks, the sonorous intoning of appropriate formulæ in which the kneeling congregation joins, the solemn interrogatories of the Abbot to which low responses go trembling up into the dimness above, and the tears of mingled pain and joy of a mother who sees her son go from her into the remoteness and sanctity of the Holy Order, are evidence enough that, though untrammelled by the petty restrictions and observances which to some minds seem to constitute the essentials of religion, the ceremony of

ordination is regarded with anything but indifference and laxity in Siam.

The generic term for a monk in Siamese is *Phra Song*, *Phra* meaning 'Excellent,' 'Holy,' 'The Best', a term applied also to Kings and Princes; and *Song*, a Pali word meaning 'Monk.' They are also called *Chao Ku*. European writers allude to Siamese monks sometimes as 'Bonze,' the Japanese for a monk, or more commonly as 'Talapoin,' a word which was supposed to be derived from *Talaput*, the large fan which monks hold before the face to screen them from worldly distractions, but which Gerini has shown to be from the Môn *Tala-Khpoi* or *Tala Poi*, meaning 'Our Master,' the terms usually employed by the Môn in addressing their monks, and probably first imported into use among writers on Siam by Portuguese familiar with Martaban and other Môn centres. Neither 'Bonze' nor 'Talapoin' are terms ever used in Siam.

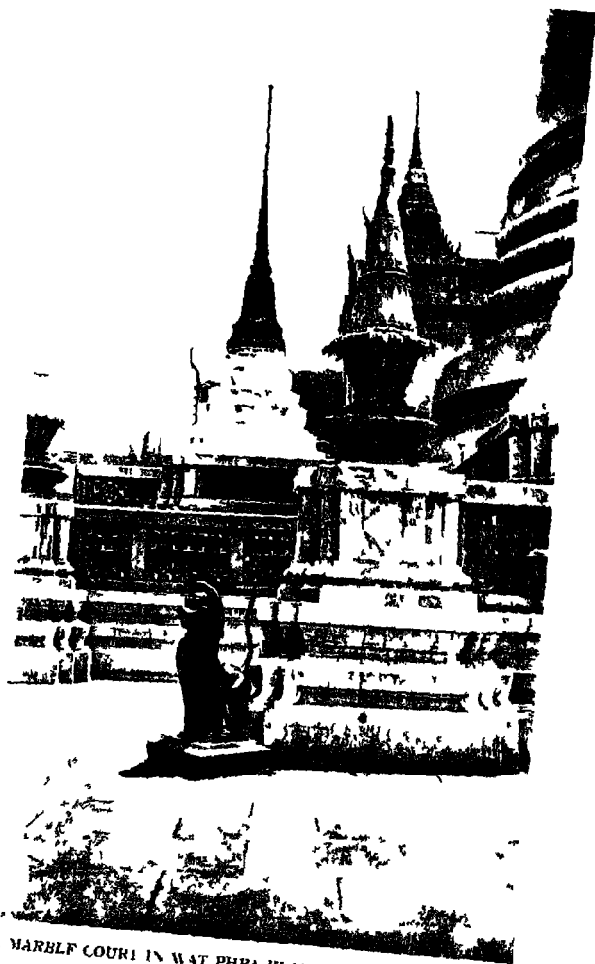
The Monastery. The Monasteries, or *Wat*, in which the monks pass their peaceful and secluded lives, are laid out more or less in accordance with a general plan within an oblong space enclosed by a brick wall. The short sides of the parallelogram are usually made to face east and west, with the principal entrance in the middle of the east wall, but this arrangement is not always rigidly adhered to. Usually the containing wall is from four to six feet high, rising into pointed arches at the entrances, but sometimes, in the case of the larger *Wat*, it is much higher and has the cells of the monks built against its inner face, or forms the back of a penthouse gallery running round the interior and containing rows of images or of wall-paintings depicting scenes from the life of the Buddha and from ancient tales of Brahman mythology. Facing the main entrance stands the Temple or *Bote*, the sacred fane wherein ordinations and other special services are held. This is the Holy of Holies and upon its embellishments the utmost of which art is capable is brought to bear.

It is an oblong building usually carefully oriented, the outside walls are of stuccoed and whitewashed brick-work, there are wide porches at each end and sometimes, though not always, a peristyle running along the sides, the roof of which is supported on square brick columns, the floor of the porches and peristyle is usually paved with tiles of terracotta or marble. The walls are pierced with doorways at either end and with high windows along the sides, the frames of which are often elaborately carved and heavily gilded, or covered with designs in lacquer-work. The doors and window-shutters are ornamented in a similar manner. Glass windows are only seen in a very few of the more ambitious modern buildings. Above all rises the steep roof which is the chief beauty of Siamese ecclesiastical architecture. The ridge runs east and west following the central line of the building and at each end tapers up into a graceful curve below which a series of similar gable-ends project one under the other, extending over the porches below. Each gable-end rises into a point at the apex and each has elaborately-carved eaves with upward-curving points at the lower ends. The whole is covered with highly-glazed tiles of rich red, blue, yellow and green, arranged in broad, alternate lines of colour, while the wall-spaces below the eaves of the final gables are richly ornamented with gilding and lacquer, and sometimes with porcelain plates let into the stucco. The walls within the building are covered with paintings and with designs which lead the eye upward, away into a twilight gloom in which the massive rafters are dimly seen. The tiled floor is bare of furniture but for a few porcelain vases or similar ornaments, and at the far end, facing the east, stands an Altar supporting a large gilded image of the Buddha with a number of lesser images grouped around it. The dim light and the coolness after the glare and heat outside, the ever-present scent of incense and the silence, evoke feelings akin to those experienced in

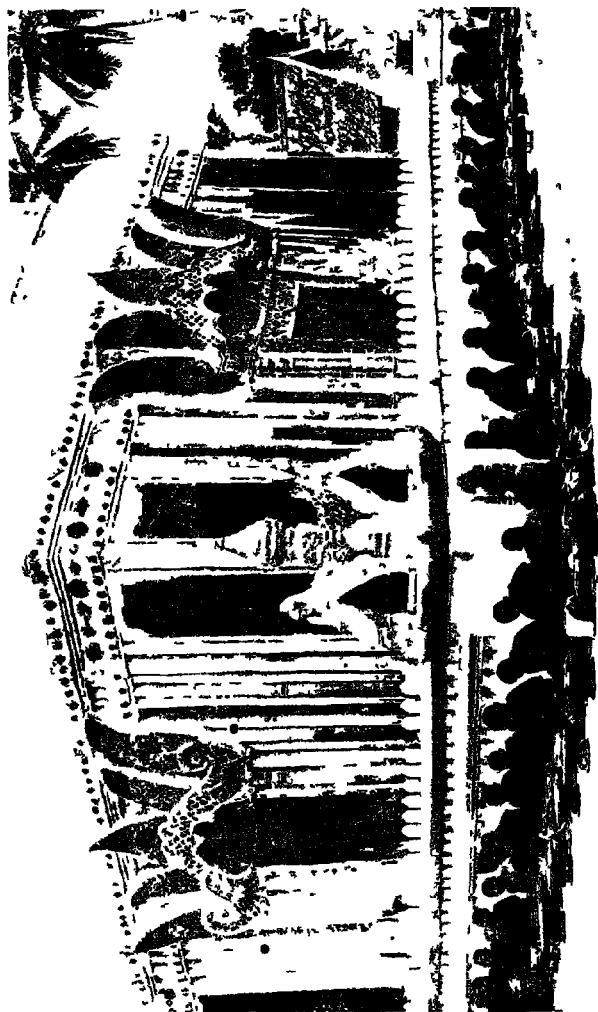
the interior of the old-world churches of Europe, and do not fail to impress the mind with the fact that to a large section of humanity the spot is sacred.

Outside and around the *Bote*, at the four cardinal, and at the four intermediate, points, are large flat stones (*Bai Séma*), in shape conventionally resembling the leaves of the *Bo*, or Pipul tree, sacred to all Buddhists as having sheltered the Teacher during the meditation from which he emerged omniscient. Within the *Bai Séma* the ground is holy and is for ever dedicated to the use of the Church. Sometimes the *Bote* is enclosed in an inner wall which, in the case of the large and important *Wat*, may have cells or image galleries built against its inner face. Behind the *Bote*, to the west, stands a *Phrachedi* or reliquary monument and round about it are the *Wihan* (*Vihara*) or image houses wherein is deposited a heterogeneous collection of images representing the Buddha at various stages of his existence; also Phra Rama, the Judge of Souls, Phra Sanghachai, the dispenser of rain and fecundity, Phra Torani, Goddess of the earth, and other Brahmano-Buddhist deities, with Phra Mokalaw and Phra Sariput, early disciples of the Buddha, and other saints. Near by is the *Rong Tam* or lecture-hall, where sermons are preached, and where every day the boys of the neighbourhood receive the rudiments of education. A row of small houses stands at the far end of the enclosure, and these, which are called *kudi*, are the dwelling-places of the monks. A bell tower, a library and a *sala* or rest-house, are sometimes, but not always, found within the *Wat* precincts.

The plan above described is adhered to pretty closely in the building of *Wat* of average size and endowment, but amongst the many thousand monasteries of Siam, variations in arrangement of almost every possible kind are to be found. In some the *Bote* is so large as to fill the entire *Wat* enclosure, in others the *Wihan* is larger and more ornate than the



A MARBLE COURT IN WAT PHRA KHAO WITH BRONZE LION



MONKS SETTLED WITH FOOD BY A NERPE MAKER

Bote. In others again, as in the case of the famous *Wat Phra Pathom*, the *Phrachedi* is so large as altogether to eclipse the other buildings. Sometimes the *Phrachedi* is replaced by a *Phraprang* and sometimes both are present, and that not singly but in groups of half a dozen or more. At times the fancy of the builder has inspired him to introduce foreign architecture, such as the true arch, or Corinthian columns, into his work, producing a hybrid result very much the reverse of pleasing. In one instance, at Bang Pa In, one of the King's country palaces where a large number of monks is maintained, the *Wat* is laid out in groves of shade-trees, the *Bote* takes the form of a European Church with steeple and bells complete, and the *kudi* are substantial villas bowered in trees. The extent and the nature of the embellishments within and without the *Bote* and *Withan* also vary greatly, being naturally in accordance with the wealth of the supporters of the *Wat*. Thus many of the great temples of the capital are frequently repaired and improved by the best artists in the shape of clocks and candelabra, wax flowers in glass cases and other ornaments which are placed on the altar as votive offerings ; while those in the rural districts are sometimes scarcely better than empty ruins. To build a new *Wat* is accounted one of the surest ways to make personal merit, but to repair one which some one else has made is considered merely to increase the merit of that other. Hence he who desires to lay up riches in Heaven prefers to erect a new building rather than to repair an old one even though his means will only permit of a miserable jerrybuilt affair ; and thus the country is dotted with *Wat* in every stage of dilapidation and decay, and also with many cheap constructions whose ugliness makes them so many blots upon the landscape. Fortunately, however, for a son to repair his father's *Wat*, and so increase the parental merit is accounted a good action, more especially of late years, and for this reason many

of the finest Royal *Wat* and other monuments of the past have lately been rescued from impending destruction.

Life and Conduct of the Monks. The daily life of the Siamese monks, though governed by routine, is not so minutely ordered as is the case with those of some other Buddhist countries where a narrow rigid observance of the letter of the 'Law' is regarded as more meritorious than any action, however truly in accordance with the spirit thereof, not in the closest adherence to ritual. Certain clearly-defined actions and duties are demanded of them, but for the rest they are allowed to dispose of their time as they like, provided always that they avoid the thousand and one specified sins, the list of which they have by heart and to commit any one of which, trivial as many of them may seem, is to imperil all the merit which the monastic life causes to accumulate.

On rising in the morning at dawn, the monk bathes himself, joins his brethren in the *Bote* or *Wihan* whither they are summoned by the sound of the monastery bell or drum, and for a few minutes recites there certain prescribed prayer-like formulæ, afterwards helping to sweep out and clean the sacred precincts. He then takes his begging bowl and goes forth on his daily quest for alms, which he collects by the simple process of standing in meditative attitude before each house he comes to until the occupants bring food and place it in the bowl. He is forbidden by the Rule to ask for alms or in fact to speak at all, and even the device, practised by the monks of Burma, of calling attention to their presence by sounding a small triangular gong, is forbidden him. He eats of the food thus collected as soon as he gets back to the *Wat*, and again at eleven o'clock, the interval being occupied in meditation or in teaching. After midday no monk may eat any solid food, though it is permitted to drink tea or coconut milk, to chew betel, and to smoke.

The afternoon is given up to the study of the Pali language, to reading the sacred books and to meditation. In the evening the great bell or drum again summons the fraternity to prayers, and afterwards a little walking exercise brings the day's occupations to a close. The sound of the temple bell at nightfall is the signal for the return of all monks who may be beyond the precincts.

Meditation, which Buddhists regard as the highest means of self-improvement, is the chief business of the monk and is in fact the *raison d'être* of the monastic life. The most elementary form, called by the Siamese *kammahtan*, consists in the consideration of one or other of the elements of life until that element resolves itself into a manifestation of "change, sorrow and illusion." A number of Pali formulæ, learnt by heart, are repeated to assist this meditation, and it is probable that the mechanical muttering over and over again of a string of meaningless words in a half-understood language is, in effect, a powerful aid to the inducement of that foggy and bemused state of mind which is said to be the right condition for the reception of divine illumination. A second form of meditation is *phawana* or the consideration of charity, pity, joy and sorrow, with a view to arriving at an accurate analysis of the pleasures and the pains of all beings, and to the cultivation of a condition of impervious security, removing the mind beyond the reach of hate or of affection or of any other passion and into a state of absolute equanimity. A third form of meditation which the Siamese called *Chan* (Sanskrit, Dhyana) is a form of abstract thought or ecstatic trance, the successful practitioner of which attains to supernatural powers, such as those of invisibility, of flying, of assuming other forms, of miraculous sight and hearing, and of thought-reading. It is by the exercise of *Chan* that the astral body becomes separated from the corporeal, but the material-minded Siamese is not exactly of the stuff

from which Mahatmas are made, and the monks of Siam are usually content to leave such intrusions into the occult recesses of nature to foreign exponents of esotericism, while the laity is apt to regard professors of *Chan* as charlatans.

By the rule of the Order a monk is allowed the possession of eight things, namely three cloths all of which are worn at the same time and which the wearer is supposed never to put off, a waist-girdle, a begging-bowl, a razor, a needlecase and a small cloth through which to filter drinking-water, the last not for hygienic purposes but to prevent the accidental destruction of life by the swallowing of aquatic animalculæ. To these were long ago added, by common consent, a fan, a spittoon and a water vessel. These latter articles, made of silk and ivory as to the fan and of variegated coloured enamel, a sort of rough home-made cloisonné, as to the others, are used as insignia of learning, and accompany the various degrees of *Barien*, being presented by the Ecclesiastical authorities for use during the lifetime, or the continuance in Holy Orders, of the recipient. A large umbrella which serves the double purpose of a sunshade by day and a sleeping tent by night when the owner is on pilgrimage, is also a recognised item of private property of a monk. With the passage of time and the growth of civilisation the rules of absolute poverty and profound humility by which the Order is nominally bound have undergone considerable relaxation. Almost every monk now possesses books and writing materials, several changes of clothes, and these often of costly silk instead of second-hand rags, tools and implements, pots and pans and other utensils, gifts of the pious, which should be the property of the *Wat* but are not. Also the modern monk decorates his cell with pictures, mats, and other furniture, and it is not uncommon for monks in Bangkok to drive in carriages, while the Yellow Robe has even been seen fluttering from a motor car, the holy occupant

permitting himself the pleasure of this exhilarating method of locomotion—possibly because nowhere in any part of the Law has the Buddha specially interdicted automobilism.

It is not of course to be expected that amongst the enormous number of Siamese monks there will not be many who are idle and worthless and a disgrace to the Order, but the vast majority attempt to follow the Rule according to their simple lights, which are, to live in celibacy, to eat frugally, and to recite formulæ of meditation, which usually have no particular meaning for them, whenever the mind is unoccupied. These latter certainly achieve the first aim of the Order, which is to live without sinning, and are thus worthy of the respect which is paid to them by the laity. But many monks rise above the level of placid nonentity and contented ignorance which marks the average, and these represent the most intellectual part of the nation. They are profound students of Pali and of the sacred books of their religion ; they are the grammarians and historians of their country, and by their saintly lives they raise the whole moral standard both of Siam and also of Buddhism. Unfortunately, however, the idle and the wicked form too large a section of the monkhood to pass unnoticed. Occasionally the Order is made use of as an escape from liability to military service or to the payment of debts, and too often persons who have committed serious crimes seek refuge from the punishment for their misdeeds in the inviolable sanctity of the yellow robe. Again, many of the monks, finding the ignorant peasantry only too ready to endow them with supernatural powers, and being unable to resist the temptation offered by popular credulity, so far neglect the tenets of their religion as to engage in the manufacture and sale of charms of many kinds and often become either half-mad believers in their own occult powers or degenerate into mere quacks. The influence of these is often most pernicious,

both because of the encouragement they offer to the practice of witchcraft in many forms, and because of the occasional political upheavals and outbreaks in the rural districts of which their preachings and prophecies are the cause.

BUDDHIST FESTIVALS AND CEREMONIES.

Four days of the Buddhist lunar month, namely the eighth of the waxing moon, full moon, and the eighth and fifteenth, or last day, of the waning, are set apart as minor festivals and holidays to be devoted to visiting the *Wat* and to the performance of other religious exercises, principal amongst which is the offering of food to the monks. Apart from these forty-eight days called *wan phra*, which roughly correspond to the Christian Sundays, there are many others devoted to the public celebration of important religious observances, during which the whole population makes holiday.

The Festival called **Khao Wasah** (entering of the rainy season), and **Ok Wasah** (coming out of the rainy season) festivals, mark the beginning and end of what has been called the Buddhist Lent, a period of three and a half lunar months, beginning on the first waning of the eighth month, or about the month of July, during which the monks may not travel, but are supposed to give themselves up to fasting and special meditation, while the laity also variously restricts its usual pleasures. The season has some points of resemblance with the Christian Lent and the festivals with which it opens and closes may be likened to the Roman Catholic Carnival shorn of its more boisterous manifestations. The chief observance of the holiday consists in the donning of fine raiment and visiting the *Wat* with food and other offerings for the monks. The period of *Wasah* was originally that during which, before the existence of monasteries,

the wandering mendicant monks settled for the rainy season in temporary huts provided by the people and thus, owing to the presence of the monks, it came to be regarded as the season most appropriate to the exercise of religion.

The Khan Wisakha festival commemorates the birth and death of the Buddha and his attainment of the Buddhahood, all three of which events are said to have occurred on the same day, i.e., the fifteenth or full moon of the sixth lunar month, some time in the month of April or May. This festival continues for three days and is marked by the giving of alms, the making of offerings to the Buddha, the feeding of the monks and the assembling of the people to hear special recitations and sermons. Illuminations and torchlight processions are features of the occasion.

The Thot Krathin, literally the "laying down of the holy cloth," or presentation of the monastic robes, is the most prominent, if not the most important, Buddhist festival observed in Siam. It begins with the second half of the eleventh lunar month, or about October, and continues until the following full moon, that is, for one lunar month. During this period the monks of every *Wat* are supplied by their supporters with robes to wear during the ensuing year, and everything possible is done to make the ceremony of presentation an imposing function. A very large number of *Wat* are classed as *Wat Luang*, that is, they subsist upon the Royal bounty, and in theory the King is supposed to present the robes personally at each of these. Practically this is impossible and various nobles and officers of state are deputed to represent Royalty at the more distant, a few only of the most important being reserved for the visits of His Majesty in person. The processions which escort the King to the *Wat* are arranged on a magnificent scale with the most careful regard to spectacular effect, and some of them form highly interesting

exhibitions of the fast disappearing pageantry of Old Siam. To the *Wat* nearest the Palace, the King is carried, seated on a throne borne on a platform upon the shoulders of a large number of men. The streets are lined by the military, who, with the police, keep back the thousands of people thronging to see His Majesty go by. The *cortège* is headed by the Royal Bodyguard with other battalions of modern equipped infantry. Soldiers and palace-guards follow, dressed in the costume of long ago, and a body of blue-clad lictors immediately precedes and surrounds the King. Until quite recently, the lictors carried bundles of canes, betokening their office, which formerly was to chastise any person in the crowd who dared to raise his head or to move from the prostrate position demanded by the presence of Royalty. The throne is borne along with its Royal occupant, closely surrounded by a compact crowd of household officers, servants, slaves, and relays of carriers, all moving together at a rapid walk, but with no apparent order. A number of royal umbrellas, fans and fantastic-shaped halberds and similar weapons, are carried by handles long enough for the Royal Person to be shaded by the first and to have the others practically within reach. The throne is magnificently gilt, the King is resplendent with gold and sparkling jewels, ancient arms flash and glitter, and the bright tropic sun shines on the pomp and circumstance of former days. After the King there follow several of the first Princes of the land, each borne along in a gaily coloured palanquin with a gilded roof but open sides, and surrounded by a crowd of servants and slaves, bareheaded and shoeless, who hurry by, each group crowding their master as closely as may be, and bearing amongst them his sword, betel-box, spittoon, teapot, etc., all implements of gold or silver. It seems possible that this crowding and hurrying originated in the old days when Court intrigue still bore assassination as its fruit and when it

was consequently necessary for those in high places to be ever on their guard and surrounded by their own people. On arrival at the *Wat*, the King is received with the beating of drums, the blowing of horns, trumpets and the conch-shell instrument of the ancient Brahmans, and with the strains of modern military bands braying the national anthem in clamorous rivalry with the music of old. A guard-of-honour presents arms, His Majesty alights by means of a flight of steps built of brick, against which the throne is brought to rest and, taking a set of yellow robes from the great number placed ready near the door, enters the *Bote* and lays his offering upon an altar, at the same time lighting with a taper five candles and five incense sticks which are placed ready there. He then bows himself before the monks and the statue of the Buddha and makes the profession of faith, "I honour the Buddha, I honour the Law, I honour the Order," after which he renews his vows to avoid the deadly sins. The yellow cloths are then duly presented to the monks, the Superior of whom acknowledges the gifts; the profession of faith is once more made before the altar and His Majesty leaves the *Wat*, mounts to his throne and is borne off amid the blare of trumpets and the beating of drums.

Processions by horse-carriage, and nowadays by motor-car, are arranged for the Royal visits to more distant *Wat*, but the finest and most interesting of all the celebrations are the processions by water to the *Wat Luang*, some of the finest temples in the country, which stand on the river bank. The wonderful royal barges of Siam, in reality gigantic dug-out canoes, each one hewn from a single tree, were the admiration of the earliest European travellers who visited the country, and illustrations of them are given in most books of travel of the seventeenth century. The royal barges of to-day are constructed on models similar to those of the kings of Ayuthia, and are no

whit less beautiful. The most elaborate of them have large high-towering figure-heads representing *Nak*, *Khrut*, and other mythical creatures, but these are rarely seen, the King preferring a more simple type with pointed prow and no figure-head, but with a high stern. The vessels are about 160 feet long, and of seven feet beam in the broadest part, with smooth, rounded bottom and beautiful lines running up into a graceful curve at the tapering stern. The sides are intricately carved and heavily gilded, and from the bow and stern depend large tassels of Yak hair, two at each end, with a piece of cloth-of-gold brocade hanging between them, charms to keep away evil spirits. A little aft of midships, a pavilion with cloth-of-gold roof and side-curtains is supported on gilded pillars, and the boat is manned by seventy paddlers seated in pairs forward and aft of the pavilion. At the stern are the two steersmen, and near the bow an individual stands on a small platform, where he controls the stroke and keeps the time by tapping on the deck with the butt-end of a long silver spear. The crew, who are dressed in the crimson uniform of the warriors of ancient Siam, are well drilled and flourish their long paddles in perfect time, raising them high in the air at the end of each stroke. The King, seated in one such vessel with the offerings for the *Wat* in another, sets out preceded by his guard-boats and surrounded by his princes and nobles in similar but smaller canoe-barges and followed by countless boats of every description; proceeds with beating of gongs and firing of cannon from the shore, makes his offerings at the riverside *Wat* in the manner already described, and returns with the same ceremony to the palace in the evening. All through the month the processions continue at intervals; the people, when not engaged in making their own private offerings, form crowds of delighted spectators, and at the end of it all the monks of every *Wat* are provided with robes more than sufficient to clothe

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them during the coming year, while, what with offerings, street decorations and local ceremonies in every corner of the country, a satisfactory stock of merit has been placed to the account of everybody.

Less important regularly recurring Buddhist festivals are the *Phrabat* pilgrimage, the *Phu Khao Thong* fair and the *Kaw Phra Sai*.

The Adoration of the Sacred Footprint has from very earliest times been a characteristic of the Buddhist religion. Amongst the innumerable distinctive marks which the 'Life' (Pathomma Somphotiyan) mentions as appearing on the body of the Buddha, marks by which his future Buddhahood was revealed to learned Brahmans soon after he was born, are included certain peculiarities of the feet, such as the equal length of the toes, the backward projection of the heel, and above all, the lines and signs on the sole of the foot in the middle of which is a representation of the *Chakr* or Wheel of the Law, the means of exterminating sin and the emblem of the Circle of Transmigration. In the 'Life' the enumeration of the signs begins: "On each of his feet is a figure of the beautiful wheel *Chakr* with its thousand rays and spokes, all richly adorned as if it were a wheel of emeralds. Around the *Chakr* are one hundred and eight other figures, namely the crystal spear, a female figure with ornaments, the flower *Phutson*, a chain and neck-jewel, a *Bai Si* standard, a wicker seat," and so on through a whole catalogue of pictures of the most extraordinary and diverse nature.

Long after the departure of the Buddha from this world and from the circle of existence, certain footprint-like marks which were discovered in various parts of India, revealing some real or fancied traces of the above signs, and more especially of the *Chakr*, came to be revered as the footprints of the Buddha in much the same manner as the so-called footprints on the top of the Mount of Olives, in the Mosque of Omar

at Jerusalem, at Poitiers in France and in other places, are locally worshipped as those of Jesus Christ.

Now the religious works of the people of Ceylon, Burma, and Siam, severally maintain that the Buddha miraculously visited each of these countries, and the holy books are now supported by ocular evidence in the shape of footprints in all three. That on the summit of Adam's peak in Ceylon, said to have been discovered about the year 90 B.C. by a king engaged in hunting, is the oldest by far. The footprint at Shway Zet Taw in Burma, set deep in a high rock, standing amid the beautiful scenery of the Yoma foothills and washed on three sides by the waters of the Man River, was revealed in a dream to a monk in the fourteenth century A.D., while that of Phrabat in the hills which rise out of the plain of Central Siam, a little to the east of Lopburi, was discovered by a hunter in the beginning of the seventeenth century.

The *Phrabat* or, in full, *Phra Phutta Bat*, that is, the 'Sacred Foot' or 'Holy Buddha's Foot,' is covered by a *Moradop*, a small square temple of brickwork surrounded by carved pillars which support a graceful, tapering, compound roof of seven stages, ending in a tall thin spire. The seven eaves of the roof are highly ornamented and the whole structure, perhaps sixty feet high, is richly gilt and has a most beautiful effect when seen with the sun shining upon it or when reflecting the limpid rays of the tropic moon. Flights of steps lead up to the platform whereon the temple stands, and the rock floor within is covered by a silver wire carpet, while the walls are decorated with frescoes depicting the usual scenes from the 'Life.' The footprint itself, a depression in the rock about eighteen inches deep and four and a half feet long, is under a canopy in the middle of the temple and is usually covered by a wooden casing. It has no particular resemblance to a footprint and there is no appearance of the *Chakr* and other supernatural

marks of the Buddha's foot, but a gilt plate on the wall shows all the marks which should be there and which are supposed to have been obliterated by an accident. .

To this shrine come every year at the full moon of the third month, that is about January or February, great crowds of pilgrims from all parts of the country, and especially from Bangkok some 100 miles distant. Formerly the journey was made by boat to Lopburi and thence on foot, in carts or on horse- or elephant-back, to the Phrabat hills, and occupied many days. Now, special trains take the pilgrims in a few hours from the capital to the nearest station on the main line, whence a light railway carries them direct to the shrine. All through the days immediately preceding the full moon, gaily dressed pilgrims throng the steps of the shrine and prostrate themselves there, making offerings, according to their means, of toys, pictures, clocks, mirrors and other queer objects bought in the Bangkok shops, or sticking small patches of gold leaf on to every available space of the wall and pillars of the temple. From morning to night the good work continues, while little bells hanging under the seven eaves tinkle in the breeze, and the deep and mellow sound of great gongs struck by the worshippers ascends to Heaven, together with the scent of a thousand burning incense sticks, inviting attention to the zeal of devotees below. At night, the crowd finds sleeping space in the numerous *Sala*, or rest-houses, which surround the shrine, and the moonlight hours are passed in mild flirtation and merry-making, interspersed with holy readings and recitations by the monks.

The *Phrabat* in the hills east of Lopburi is not the only 'Footprint' in Siam, though it is by far the best known. The *Phrabat Si Roi*, not far from Chiang Mai, enjoys considerable attention from the people of the northern city and its environs, while many others of

merely local reputation are situated in the remoter districts, notably that on the island of Puket. It is not pretended that these numerous footprints are genuine vestiges of the Buddha. They are, in fact, mere imitations in brick and plaster of the rock-impression at Phrabat, serving as a substitute for the real article for those who desire to worship the Sacred Footprint at the appropriate season, but who, for various reasons, are unable to make the pilgrimage thither. Such imitations or copies always reproduce in much detail the *Chakr* and all the other distinguishing marks of the foot of a Buddha, though these are now conspicuously absent in the prototype of the Phrabat hills.

In the museum at Bangkok there is preserved a block of stone on which are the imprints of a colossal pair of feet, accompanied by an inscription to the effect that this is a copy of the sacred footprint of Adam's Peak in Ceylon, made by the order of the King of Sukhothai, in what corresponds to the year 1426 A.D. (two hundred years before the discovery of the Lopburi footprint) for the use of Siamese worshippers. The stone was found amongst the ruins of Sukothai and brought to Bangkok early in the nineteenth century. Here again, the *Chakr* and other signs are depicted though these are not, and never were, visible in the original, and, moreover, in this case while the copy is of a pair of footprints, on the top of Adam's Peak there is only one. There is ample authority for the belief that the eye of complete faith can discern things unseen by the doubter, but here is an instance of the eye of faith seeing double, a matter not hitherto so well authenticated.

Phu Khao Thong Fair. During a few evenings of late December or early January, an annual fair is held round about the *Phu Khao Thong* or 'Golden Hill,' a high mound of brick and earthwork, surmounted by a *Phrachedi* and situated just outside the eastern walls of Bangkok city. The object of the fair is to afford

an opportunity for the making of merit by purchasing offerings for, and by adoring, the sacred relics of the Buddha, which are deposited in the shrine at the top of the hill: Booths for the sale of offerings are erected at the sides of walks laid out round the foot of the hill, theatrical performances and displays of fireworks continue all night, and a dense crowd of chaffing youths and laughing damsels move slowly to and fro and up and down the long spiral stairway giving access to the shrine. The scene is illuminated with pink paper lanterns shaped like lotus flowers; temporary restaurants provide exhausted merit-makers with food of all kinds; toys and fairings of every description are to be had, and everybody spends his money and is happy. The fair is sometimes marred by a certain amount of rowdiness and thieving, in which soldiers and sailors off duty are usually conspicuous.

The Kaw Phra Sai Festival takes place in the dry season and has for its object the obtaining of fresh sand wherewith to strew the precincts of the *Wat*. It is interesting to note the analogy between this ceremony and the ancient rush-bearing festival still observed in a few old English churches. The sand is brought to the *Wat* in carts, in boats, in baskets, or in anything in which it can be conveyed, and is deposited in conical heaps which are decorated with little flags and moulded to resemble miniature *Phrachedi*, the depth of a donor's piety being, of course, discoverable by the height of his pagoda. The better classes usually content themselves with paying for a sand pagoda which can be had in any of three sizes and placed *in situ*, at a regular fixed tariff advertised in lists which are circulated shortly before the festival, and thus merit is acquired by many at a small cost and with the minimum of trouble. The people, as usual, make this festival an occasion for feeding the monks, for pervading the *Wat* dressed in their best clothes, and for having a good time generally.

Other Observances. It remains to notice some other Buddhist festivals which occur at frequent but irregular intervals. These are the accompaniments of the dedication of new *Wat*, the casting of images of the Buddha, the installation of such images in their temple, the cremation of dead monks, and many other matters. The reception of the Holy Relics, said to be almost certainly those of the Buddha and a portion of which was sent to Siam by the Government of India some twenty years ago, was the occasion for an especially noteworthy festival, marked by much public rejoicing and merry-making. The subsequent distribution of the same relics between Siam, Ceylon, Burma and Japan, effected in Bangkok under the direction of His Majesty King Rama V, was performed with an elaborate ceremony in which representative monks of all those countries took part.

The dedication of the *Wat Benchamabophit* within the Royal gardens of Dusit, the casting of a great bronze image by the King in person at Pitsanulok, and the removal of the ancient image of Buddha known as Chinnaraj from the North and its installation in Bangkok, are amongst the most elaborate occasional festivals of recent years. The last culminated in a magnificent procession by water, when the image was conveyed to its present resting place, in a temporary *Moradop* temple constructed on rafts, accompanied by the King and his whole Court in State barges, and followed by thousands of gaily decorated boats of every description, the whole forming an impressive spectacle which those who witnessed it will not soon forget.

BRAHMAN CEREMONIES AND OBSERVANCES.

In addition to the purely Buddhist ceremonies and observances, of which some few have just been detailed, there are many others in which Brahmanism predominates, and these absorb an almost equal amount

of the time and attention of the Siamese. The life of each individual, more especially during childhood, is punctuated by the performance of personal religious rites which mark the various stages of his career, and which, being of great antiquity and of undoubted Brahman origin, prove even more clearly than do the relics of ancient cities, the extent to which Brahmanism at one time prevailed in the country.

The Indian Brahman of to-day is relentlessly pursued from his birth onwards by religious ceremonial. The naming, weaning, first footsteps, first speech, the adoption of clothing, ear-boring, the cutting of the hair, and the assumption of the sacred thread are all occasions for the exercise of elaborate ritual. After all these comes the ceremony of marriage, and finally when he has occupied himself for a few years in putting his children through the self-same ordeals, he disappears from the world amid the flames of the all-important ceremony of cremation. There is evidence that most, if not all, of these Brahman ceremonies were formerly observed throughout Further India by the more civilised peoples, but that in course of time the different races occupying that part of the world specialised in the matter, and came, by accident or design, to attach particular importance to some of them while observing the others perfunctorily or not at all. Thus the Burmese and Lao pay great attention to the naming and ear-boring ceremonies, while neglecting most of the others, except where persons of royal descent or of high importance are concerned, and the Mohammedan Malays of Southern Siam, in spite of the fact that such things are anathema to the good Mussulman, observe the Brahman ritual celebrating the first footsteps of children, and have got the Islamic rites of circumcision mixed up with those of the Brahman topknot-cutting to an altogether surprising degree. The Siamese consider the naming, the topknot-cutting and the cremation as ceremonies of the first

importance, that of marriage desirable but by no means necessary, and the rest of no account. In Siam, however, a number of public ceremonies of pronounced Brahmanistic character are regularly observed, so that, although so many of the ancient private rites have been discarded, there remains enough of Brahman ceremonial to keep the people fairly busy in the intervals between the Buddhist festivals. The Brahman ceremonies are by no means repugnant to Buddhism, and the monks of the Holy Order deem it quite in consonance with the Rule to be present at their celebration, and to improve the occasion by the recital of Buddhist homilies, reminding their hearers of the sorrows and vanities of this wicked world. Sometimes, and this more especially in the rural districts where Brahman professors are seldom available, the monks even officiate at the rites themselves.

(**The Cutting of the Topknot**, marking the passage of the individual operated upon from childhood to adolescence, is an important ceremony of Siamese private life. The observance has undoubtedly come to the Siamese by Brahman agency and not by way of Buddhism. It was regularly observed in India long before the appearance of the Buddha, and, judging by the prevalence of a ceremony of tonsure in many widely separated parts of the world as an indication of a new phase of life or of the devotion of the individual to a set purpose; it is probably a manifestation of one of the most ancient customs of mankind. In Siam, in spite of its non-Buddhist origin, the monks take considerable part in the ceremony, which the majority of the people believe to be a Buddhist rite.

Shortly before the arrival at the age of puberty, that is at about eleven years with girls and thirteen with boys, an auspicious day and moment for the celebration is fixed by a Brahman astrologer or, in default of such a person, by a complaisant monk or other soothsayer. When the time approaches, prepara-

tions are made by the erection of an altar in the house of the parents of the child, upon which is placed an image of the Buddha, both the altar and the room in which it stands being decorated with candles and such ornaments as the family can afford. Around the altar are disposed shears, razors, bowls of holy water, a conch-shell, and other paraphernalia of the ceremony, arranged in a circle, and a stand is placed near by on which small portions of food are disposed in packets and on plates fashioned from banana-leaves for the refection of the tutelary deities of the house and family.* A sacred thread is passed all round the house under the eaves, the ends of which, passing into the house, are placed convenient to the hands of the monks who shall attend the ceremony and whose homilies, travelling along the cord, shall keep all evil spirits from interfering with the proceedings. The ancestors of the child are not forgotten, for the urns containing the ashes of these are taken down from the shelf on which they usually stand and are arranged on a small altar, in which situation they attract the attention and genuflexions of their living descendants and shed a benign influence on the proceedings.

Outside the house a scaffolding is raised, on the top of which there is a square platform shaded by a canopy supported on four frail posts inclining slightly inwards towards each other and draped with curtains of muslin. A tapering pagoda-shaped structure stands on the platform containing more food on banana-leaf plates, this to propitiate a certain deity known as *Phra Ket*, or *Ketu*, the dispenser of long life and other mundane blessings. On the afternoon of the day but one before the actual hair-cutting, the friends of the family visit the house, each bringing a present, which is deposited on a table before the altar. The monks arrive later, heralded by the beating of gongs, and, seating themselves in a row on a raised dais, are regaled with tea and sweetmeats. After an interval the

child appears, clothed in the finest apparel procurable and decked with all the family jewels, and advances under the guidance of two or more Brahman priests, if such are available, who scatter rice, blow conch-shells and beat drums, and makes obeisance before the monks, one of whom attaches the sacred thread to the child's topknot. A recital of the Buddhist Commandments follows with other formulæ in which the onlookers join, after which the child retires, the band strikes up, tea, food, cigarettes, and betel are handed round and the party gives itself up to merry-making. The next day is passed in listening to the recitations of monks and the prayers and exercises of Brahmans, punctuated by the beating of gongs and followed by music and theatrical performances.

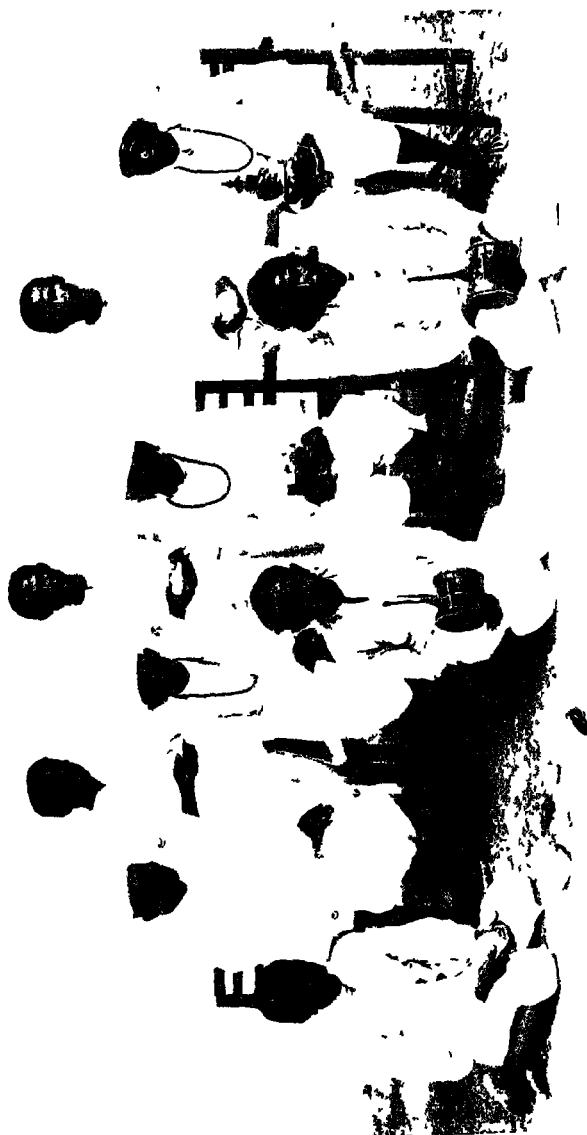
Before the dawn of the third day, the monks return quietly to the house and a meal is eaten. Silence is preserved, in order to deceive any evil spirits who may be about, into the belief that no important rite is in progress. The child, with head clean shaved, except for the topknot, appears with the sunrise, and as the psychological moment approaches, the topknot is untwisted and divided into three parts, the most honoured guest and two aged relatives take each a part in their hand, and, exactly at the right instant, cut it off amid a sudden overwhelming burst of drum-beating and music. Thereafter, a barber finishes the business professionally, leaving the child entirely bald.

At this point of the proceedings there is usually observed a peculiar rite called *Wen Wien Tien*, or "the going round of the candles," a kind of dedicatory purification that forms part of many ceremonies of Brahmanistic tendency. The principal persons assisting at the ceremony stand in a circle round the individual or object in whose honour it is performed, and pass lighted wax tapers round from right to left, each person wafting the highly odoriferous fumes of the



CHILD DRESSED FOR THE "TOP-KNOT CUTTING" CEREMONY

STANLEY PRATHMAN IN CIRMONTAI DPSS



tapers towards the centre of the circle before passing them on. The tapers are three in number and the number of times they are passed round depends upon the amount of reverence considered due to the person or thing being honoured. Another ceremony, that much resembles and often replaces the *Wen Wien Tien*, is that known as *Tak kina*, in which the performers hold lighted candles of scented wax or burning incense sticks, and themselves walk round the object of their veneration, moving always from right to left, that is, having their right hand towards the centre of the circle, towards which they waft the incense fumes with the left hand.

It is impossible to escape from the obvious analogy between these candle-waving rites and the use of incense in some Christian churches; this and other points of resemblance between the two religions having been remarked upon by almost every foreign writer on Siam. The early Roman Catholic missionaries, at a loss to explain the matter, put it all down to the machinations of the devil who, they said, possessed the souls of the Siamese completely and, for his own amusement or for their more complete damnation, caused them to worship him, or their 'idols,' which amounted to the same thing, with sacrilegious imitations of the blessed ritual ordained for the true Christian Church! The world has grown wiser in some ways, and rather more broadminded, than it was 300 years ago and it is now allowed that the similarity of many of the rites of Christianity, Buddhism, and Brahmanism, is the result, not of diabolic suggestion but of the descent of the various religions from a common starting point far back in very ancient pre-Brahmanic times.

After the *Wen Wien Tien* ceremony, the food of *Phra Ket* is removed from the raised platform outside, and the child ascends and sits down upon the vacant spot while, one by one, the monks, and after them the

friends, climb up and pour holy water from a shell upon the shaven head, until child, platform and all are wet through. A change of clothes is quickly made and the hero of the moment, clad once more in the finest possible garments, goes through the ceremony of feeding the monks, presenting rice, fish, and fruit to each in turn. This part of the observance is accompanied by much music, and, when it is at length over, is followed by final recitations and chantings of holy words and by a sermon.

Such, in brief, is the *Chulakantamangala* or colloquially *Kahn tai chuk*, the 'Tonsure ceremony,' presenting, as modernly observed, a bewildering confusion of Buddhism, Brahmanism and elementary Animism. The elaboration of the ceremony varies, of course, with the wealth and position of the family concerned. The humble peasant decorates his house with a wisp or two of white and red cloth, dresses his child in clothes and jewels for the most part borrowed, and considers himself fortunate if he can find the wherewithal to feed two or three monks and to entertain his nearest friends. The wealthy Bangkok citizen drapes his rooms with lace curtains and velvet, covers the floor with thick-piled carpets, and illuminates with a hundred electric lamps the altars of the Buddha and of his ancestors and the food spread for his Penates. The topknot-cutting of a Royal child is an occasion for public holiday and rejoicing; magnificent buildings are specially erected for the purpose; the raised platform of the water-pouring ceremony assumes the proportions and appearance of a hill composed of rocks with conventional trees and seven-tiered umbrellas planted upon it, and conceals within its interior all sorts of ingenious mechanism for pouring or squirting the holy water upon the devoted head; hundreds of monks and thousands of the poor are fed at intervals through each day; bands of musicians are established here and there and keep the air continually vibrating

with the sound of their powerful instruments; theatrical representations and displays of fireworks occupy the nights, and each stage of the ceremony is witnessed by crowds of sightseers.

Cremation. The Siamese ceremony of cremation has been dealt with in almost sufficient detail in Part II of Volume I. (A few Siamese consider that the disposal of the dead is not a religious matter at all, and that cremation is practised by them merely because it is an ancient custom which appeals to them on account of its cleanly and sanitary aspects. It is difficult to understand, however, how or why there should be any attempt to divorce this ceremony from religion, since it is conducted in accordance with ancient Brahman rites, while Buddhist monks take prominent part in the matter. Possibly, the contention is based upon the fact that this particular method of disposing of the dead is not anywhere specially inculcated by Buddhism.) This is true, and the Burmese, who are as good Buddhists as the Siamese (some say better), usually bury their dead, but there is no doubt at all that in the mind of the average Siamese, cremation is quite as closely connected with the compound of Buddhism and Brahmanism which represents his religion as are any of the other ceremonies through which a man passes during his earthly career.

Soothsayers. In Bangkok there reside a number of Brahmans called *Hon* (Skt. *Hora*) whose principal duty it is to act as astrologers and to conduct the numerous Brahmanic ceremonies that are observed at the Court and by the public generally. These Brahmans have a temple of their own called *Haw Prahm* or, less correctly, *Wat Bot Prahm*, where they carefully note all omens which may present themselves, and watch the courses of the stars, gathering information concerning coming events, with a view to guiding the King and the State along paths of safety to national happiness and well-being. No important

undertaking is ever embarked upon and no public ceremony is allowed to take place until the Brahmans have duly considered the signs and omens bearing upon the matter and have announced the most auspicious day, hour and minute for a beginning to be made. Theirs is the responsibility for the successful conduct of the numerous great public festivals and ceremonies accompanied by Brahmanic rites, that are held at different times of the year to ensure the public loyalty to the Throne, freedom from epidemics of disease, the securing of seasonable weather and consequent good crops; and it is to them (in theory) that the chief blame attaches for any serious catastrophe which may overtake the country.

The Songkran Festival marks the beginning of the new year according to the Maha Sakaraj, the Era which started in 78 A.D. A few days, sometimes three and sometimes four, before the actual new year's day, which occurs about the middle of April, a deity known as Sôngkran, one of the manifestations of Phra In (Indra), the Téwada king of the lower heavens, is supposed to descend to earth. The Brahmans are on the watch and are able to discern from signs in the heavens, considered in conjunction with other natural phenomena, the conditions under which the god makes his advent, and the significance of those conditions as affecting the public weal during the coming year. The Téwada may arrive bearing warlike arms, a prognostication of troublous times, or he may carry a torch, meaning fire, or he brings a water-pot, thereby implying plentiful rain and good harvests, or a lantern, prophesying a severe hot season. Perhaps he carries nothing but a wand, from which a prospect of profound peace is to be inferred. The means of his locomotion are also of deep import. If he rides upon a *Nak* dragon it is a sign of rain, if upon a *Khrut* bird, winds will be high; a cow or buffalo as steed presages agricultural

prosperity, while, should he arrive on foot, much heat is to be expected. The Brahmans carefully work out the moment of the arrival and the nature and significance of the equipment, and the facts are publicly announced throughout the country just before the firing of a gun at the capital announces that the Celestial Being is actually present. Thereupon, in every part of the land there is a vigorous outpouring of water upon the ground, that libation to the earth in spring, which is amongst the oldest and most widely practised ceremonies of propitiation in the world. Not content with watering their mother Earth, the people proceed to pay a like honour to everything which they consider worthy of reverence, such as the images of the Buddha, their parents and teachers and the monks generally, and, by a chain of reasoning easy to follow, all whom they wish to treat with politeness. The holy images are taken from the *Wat* and placed in convenient position for the ceremony and receive a copious watering at the hands of the young men and unmarried women, the latter especially, after which bottles of scent and gay handkerchiefs are presented to the monks as offerings symbolical of the ceremony. The elders are then visited and presented with similar offerings, water is poured upon them, they return the compliment of their visitors and gradually the whole community is engaged in a friendly combat of water-throwing syringes, bowls, basins and any handy utensil being freely used until everybody is quite wet through. In the Royal Palace the ceremony is observed with prayer, and water which has been blest and made holy is poured over the King and members of the royal family. At the appointed time, the return to heaven of the Sôngkran Téwada is announced by gun-fire, from which moment the celebrations are at an end and the new year is considered to have fairly begun.

Tou Nam. On the third day of the waxing moon

of the third month, which falls in February or March, and again on the thirteenth day of the waxing moon of the tenth month, that is, in September or October, the interesting ceremony known as *Teu Nam*, or "The Holding of the Water," is observed at the capital and in every provincial town. On these occasions the princes, nobility and officials assemble and renew the Oath of Allegiance to the Crown by drinking a small quantity of water which has been charmed by the spells and magic of the Court Brahmins, and this act of drinking is supposed to entail upon persons who may be guilty of future disloyalty, the displeasure of the gods and a violent and painful death. At the capital, the ceremony is observed in the presence of His Majesty, in the principal *Wat* adjoining the Palace. Within the precincts are gathered together the first princes and nobles and the leading officials of the country, while beyond, upon the wide lawns of the outer palace enclosure, detachments of cavalry, artillery and marines, battalions of infantry and the white elephants and royal chargers are drawn up in the panoply of glittering arms, accoutrements and caparisons. To the sound of drums and with a fanfare of the royal trumpets, the King appears from the inner palace, seated upon a gilded throne carried shoulder high. A thousand bayonets flash to the royal salute, guns thunder and the massed bands bray out the national anthem as His Majesty is borne along the front of the troops and in through the gate of the temple precincts. Arrived within the *Bote* of the *Wat*, the King seats himself and watches the whole of his Court and the Officers of every Government Department walk in two by two, take from a table a small cup of the holy water, touch it with their lips and retire through a further door to the outer air. The ceremony lasts the greater part of the day. In the provinces, similar rites are enacted on the same day under the superintendence of the

Official Head of the locality and thus the whole country binds itself twice a year to the loyal observance of the King's commands. The *Teu Nam* ceremony is of great antiquity and was observed at all the Courts of Further India in the days when there were many kings in the land. Failure on the part of any high official about the Court to attend at the function was formerly considered tantamount to an admission of disloyalty, while a hiccough at the critical moment, or other appearance of difficulty in swallowing the water, was deemed such clear evidence of disaffection as to justify the immediate execution of the unfortunate bungler.

Loi Khrathong. Shortly before the *Thot Khrathin* ceremonies begin, in or about October, and again about a month later, the rites of the *Loi Khrathong* are conducted at Bangkok. This is a purely Brahman ceremony, which is said to have been adopted as a national observance at the instigation of the beautiful daughter of a Brahman astrologer, a much favoured lady at the court of a monarch of long ago. The ceremony consists of the floating of baskets of fruit, flowers, betel and similar offerings, down the river Menam Chao Phaya for the purpose of propitiating the spirit of the river. The rites are observed at night and, the baskets being decorated with little lamps and incense sticks, the whole surface of the river is brightly illuminated with twinkling, dancing lights, as though the stars had fallen from the firmament upon the water. • The ladies of the palace take an active part in the proceedings and vie with each other in the elaboration of their baskets, which take the form of ships, lotus-flowers, birds, dragons and innumerable other objects. A brilliant display of fireworks adds to the beauty of the scene.

The White Elephant. The religious cult of the White Elephant, formerly common to all the countries of Further India but now almost entirely confined

to Siam, is of Brahman origin. The White Elephant was already an object of high veneration before the rise of Buddhism, as witness the fact that the earliest Buddhists, just emerging from Brahmanism and with all their old legends and beliefs clinging about them, cast this animal for the part taken by the dove in the story of Christianity, that is the messenger or instrument of the Divine Purpose in the Mystery of an Immaculate Conception. Witness also the inclusion of the white elephant among the seven characteristic adjuncts of a *Maha Chakrawarti Raja*, or "Universal Monarch," a mythical personage of far pre-Buddhist times. With a view to establishing their identity as "Universal Monarchs" it was at one time the desire of all the kings of Further India to possess as many white elephants as they could, and the animals were frequently the cause of wars in ancient days. When captured, they were maintained at Court in the utmost splendour, certain revenues being set apart for their especial use; they were attended by troops of servants, their caparisons were of velvet and gold, choirs were appointed to sing to them, and it is said that they were even consulted on matters of state.

Although now fallen greatly from their former proud estate, several white elephants are still kept at the Court of Bangkok, where they are housed near the palace, given titles of nobility and attended upon by a retinue of servants. All matters connected with them are peculiarly the province of the Court Brahmans, who conduct the ceremonies attending their capture, installation and education; who minister to them when they are ill; who conduct periodical religious services in their presence and for their behoof; and to whom falls the onerous duty of cremating them when they are dead. In the days when Burma still had a Royal Court, it was not uncommon for Brahmans to go on pilgrimage to Mandalay from Bangkok, in order to pay reverence to the white elephants kept there by the King.

It may be noted here that the term "White Elephant" is not a true translation of the Siamese, which is *Chang pheuak*, for though the word *pheuak* means "white" in Shan, it has lost its full significance in Siamese and is used only in the sense of "albino." The animals are not white, being at best a dirty grey colour, but they have the distinctive marks of the albino, which include light-coloured iris of the eye, white toe-nails, white or reddish body-hairs and pink skin at the end of the trunk, round the flaps of the ears, about the mouth and on parts of the under side of the body. •

The Swing Ceremony. Every step in the process of rice cultivation demands, in common with most of the ordinary occurrences of Siamese life, the observance of more or less elaborate religious ceremonial, for no one living in a country where the innumerable spirits of earth, air and water take such a lively interest in the affairs of mankind, individually and in the mass, as they do in Siam, would be thought at all wise in undertaking any matter as to the issue of which he might be anxious, without due propitiation made beforehand. These ceremonies are chiefly pure animism, but there are some which have been sanctified by Brahmanic approval and which are now practised in Siam as national public observances directly concerning the entire community and regarded as of the utmost importance in determining the nature of the harvest.

The first of these is the *Loh ching cha*, or "Pulling the Swing" ceremony, which occurs on the seventh and ninth of the waxing moon of the second lunar month, dates falling between the latter part of December and the middle of January. Though the origin of the ceremony as a great public celebration is not known with any degree of certainty, it is possible to evolve a hypothesis as to its import. It is quite well known that amongst the various rites ordained for the propitiation of the ancient Brahman gods, the solemn swinging to and fro of a sacred person or image

before the altar of the god was well established. Indeed, in the Brahman temple (*Haw Prahm*) at Bangkok, already referred to, there stand before the altars of the presiding deities, *Phra Isuen* and *Phra Narai*, pairs of strong upright posts surmounted by crossbars, each supporting a swing on which, at stated times, the Brahmans who guard the shrines swing themselves and also the effigies of various gods, for the edification and placation of the deity whose propitiation is at that moment desired. Now, the gigantic erection, with posts eighty feet high, that is the centre of the annual swinging ceremony, formerly stood on a rough grass plot quite close to, and opposite, the doorway of the Brahman temple, but is now in the middle of an open square about a hundred yards from it; the ceremony when it takes place is under the sole management of the Brahmans from the *Haw Prahm* and the principal personage in the ceremony represents a supposed incarnation of the god *Phra Isuen*. In *Phra Isuen* the student of Sanskrit will recognise *Iswarra* or the Mighty Shiva, the Destroyer and at the same time the Reproducer and Rejuvenator of all things mundane. The ceremony takes place at a time when the waters have dried up, the results of the present harvest are known and people's minds are turning towards consideration of the chances of next season; just the time to offer thanks for past favours and to make provision for future benefits. In fact, it would appear that the rites constitute a propitiation of *Phra Isuen* (Shiva) performed in public, so that all the people may show their gratitude and participate in the precautions taken to avert future calamity and assure the food supply.

The Court Brahmans, however, are extremely vague as to the origin and significance of the ceremony, having apparently lost their records and forgotten most of what their forefathers may have known of the matter. When pressed for information they remark

that "*Phra Isuen* likes to see swinging," and appear to consider that statement a quite sufficient explanation of the mystery.

The only *Haw Prahm* outside Bangkok is at Nakon Sri Tammarat, and here, also, there is a swing erection, which, however, is small and is only used for private ceremonies. The local Brahmans relate that in old days there was an annual public swinging ceremony at Nakon, but that since the place was reduced from the royal status to that of a province of Siam, the custom has ceased to be observed there.

Writers on Siam who have suggested a Chinese origin for this peculiar, and at first sight, puzzling ceremony, have done so, apparently, with no better reason than that Neale who lived in Bangkok in the middle of last century refers in his book to the great swing, concerning which he clearly knew nothing, as an 'Ancient Chinese Monument.'

The ceremony is conducted as follows. Shortly before the appointed date, a nobleman of the Court, a different person each year, but always a *Phaya Pan Thong* or noble of the "Golden Bowl" rank, is appointed by the King to fill the chief rôle, that of the God *Phra Isuen*. This nobleman at once begins to take lessons in godlike deportment from the Brahman professors of the Court. A few days later, the open square in which the great swing-stands is prepared. Two small thatched huts or shelters are built, one opposite the swing and the other at the eastern entrance of the square, a number of sentry-box-like structures are placed at intervals near them, and the streets which open upon the square are flanked by light bamboo trellis-work screens, placed one on each side of the roadway at right angles to it, to prevent evil spirits from coming to disturb the proceedings. Finally, a footboard is suspended from the cross-bar of the swing by six strong ropes of rattan, at a height of about fifteen feet from the ground. The board is

some six feet long by eighteen inches broad, the greatest length at right angles to the lofty cross-bar, and an extra rope hangs from it, by pulling on which from below, the swing is got into motion. A long bamboo is planted in the ground at a short distance on the west side of the swing, to which a small bag of money is fastened when the ceremony takes place.

On the appointed day, the whole city is alive at an early hour, the people flocking in thousands to the square or taking positions in the main streets leading to it. Before the sun has more than topped the city walls, *Phra Isuen* emerges from a *Wat* in which he is supposed to have just alighted on descending from the skies, and proceeds through the town, with a large number of attendant sprites. After a circuitous journey, made apparently for spectacular effect, the procession debouches upon the square by its eastern entrance, and passing across it, takes up position in the streets on the west side. The visitor is received by the Brahmans with appropriate offerings and prayers, and is installed in the thatched hut near the entrance. After a short interval, the deity is conducted to the shelter facing the swing, where he seats himself with two Brahmans on each side of him and crosses one foot upon his knee. This is a signal for the beginning of the ceremony. Four muscular looking individuals whose sole covering consists of a small loincloth and a high hat made to resemble the head and neck of a snake, are hoisted, amid cheers and much chaff and badinage on to the swing. Their headdress proclaims these as neither satellites of *Phra Isuen* nor men, but representatives of the underworld kingdom of Phaya Nak, king of Snakes and the producer of rain, sent, it is pretended, to perform for the delectation of Great Shiva before the eyes of men. The Brahmans now enter the sentry-boxes and intone prayers, and assistants pulling on the dependent rope, the swing begins to move slowly to and fro. The



THE SWING CERIMONY IN PROGRESS



THE FIRST PLOUGHING CERIMONY IN PROGRESS

momentum increases gradually, the performers sing and dance upon the swing and strike comic attitudes and the crowd yells encouragement from around. At last, the momentum brings the swing close to the bamboo with the bag of coins, and one of the swingers, leaning far out and watching his opportunity, makes a grab with his mouth and secures the bag in his teeth. If this feat is successful at the first attempt, a roar of applause ascending announces the satisfaction of the multitude, while failure to secure the bag is greeted with derisive shouts and signs of discontent. Custom has decreed that to complete the ceremony the swinging must take place three times and to that end three small money bags are provided by the Royal Treasury, the first containing twelve ticals, the second ten, and the third eight. When the first has been taken the next is affixed to the top of the bamboo and the swinging begins again, to be once more repeated when the third bag is put up. The swingers then return to earth and, using their curious hats as scoops, take water from a specially provided vessel and scatter it abroad over themselves and as much of the crowd as they can reach. This brings the ceremony to an end, and *Phra Isuen* is allowed to place his raised foot on the ground once more and, after receiving the prayers of the Brahmans, to depart with his satellites the way he came, so edified, it is hoped, by the manner in which the swinging has been conducted, that he cannot but promise the people a prosperous year. The ceremony is repeated on the next day but one, with the same observance, and is then over for the year.

Though they are unable to explain much of their significance, the Brahmans are well up in the details which it is essential to observe in the conduct of the ceremony, and they know that not to observe them, or to carry them out in too perfunctory a manner, is to court disaster during the coming season. Thus,

should the swing work crookedly, or one of the swingers fall from it, or if the taking of the coins is bungled, the omen is considered bad, while, if the impersonator of the presiding deity chances to lower his raised foot to the ground during the swinging, the worst is confidently expected. Again, if the followers of *Phaya Nak*, on descending from the swing, distribute their holy water well and truly over the greatest possible number of people, the prospects of rainfall during the coming season are considered good, whereas any bungling over this part of the performance is taken as an inference that the next ensuing rainy season will be dryer than the average. In ancient days, the ceremony was attended with much roughness and the followers of the Heavenly Being were allowed absolute licence during the processions. It is said, moreover, that if one of the swingers fell from his perch or otherwise acquitted himself in a too slovenly manner, he was liable to be attacked and beaten to death, while, if their leader forgot his part, placing both feet on the ground simultaneously or otherwise conducting himself in an ungodlike way, the Brahmans fell upon him, stole his fine clothes and hounded him ignominiously from the scene. Nowadays, however, the ceremony, though attended by a very large number of people, is a quiet and well-conducted affair.

Raak Na. The ancient *Phra Raja Pithi Mongkol Sawi Phra Nang Gala*, commonly called *Kahn Raak Na*, or "The Ceremony of the First Ploughing," takes place annually at the beginning of the rainy season, early in the sixth Siamese month, that is during the first half of May. It originally consisted of the ploughing of a piece of land by the King in person, who thus inaugurated the agricultural operations of the year with fitting *éclat*, propitiated the various spirits most interested in farming, and received from them in return, provided they were in the right humour, certain signs from which the nature of the forthcoming harvest

could be deduced. The *Raak Na* is an exceedingly ancient ceremony.) Chinese history relates that in ancient days it was the custom for the Emperor himself to plough a particular field with his own hand at the beginning of the wet season, the rice resulting from which operation was offered up to certain spirits, the ceremony having been instituted at the Court of China about 5,000 years ago. The ploughing festival at Kapilawat, the capital of Raja Suddhodana, the father of Sithat (Sidharta) afterwards the Buddha, is made the occasion of one of the best-known miracles of the infancy of the Teacher, namely the arrest of the shadow of the rose-apple tree which shaded the Immaculate Infant when he was taken out to watch his Royal Father and the nobles perform the ceremony of turning the first sods of the year. The Jesuit Fathers have placed it on record that the kings of Tonquin and Cochin-China in the seventeenth century took an active part in an annual ploughing ceremony held at their capitals. Sir G. Scott in 'The Burman' describes the performance of King Mindon Min in the *Zet Dwin Mingala* ceremony, the Burmese equivalent for *Raak Na*, which was observed every year at Mandalay until the accession of King Thibaw, who, much to the disgust of his people, allowed it to fall into abeyance. None of these, however, make any clear statement as to the origin of the ceremony, but De La Loubère in his 'Royaume de Siam' supposes that it was introduced into Siam from China where it was invented to enhance the dignity of agricultural labour. In support of this theory, there is little or no evidence, whereas from the prominent part taken in the matter by the Court Brahmans and from the nature of almost every detail of the ceremony, there is every reason to believe that, so far as Siam and Burma at least are concerned, it was originally introduced from India. It is possible that the custom, which is based on the oldest pre-

Brahman, Shamanistic superstitions, is, in one form or another, as old as the art of cultivating rice and, being found by the Brahmans already long established, was adopted by them. If this is so, it seems probable that the rites have been practised in India, China and Further India with more or less similarity of form ever since the remote date when rice was first grown in these parts of the world. }

Some twenty years ago, the ceremony had come to be a good deal neglected and, passing almost without notice of any kind, seemed about to fall into complete abeyance. Recently, however, owing to an awakening of Royal interest in the matter, it has experienced a revival and now takes place on a field belonging to His Majesty, specially reserved for the purpose, outside the city. Many centuries ago it ceased to be the custom for the King himself to guide the plough, a high officer of state being appointed to represent Royalty for the occasion, and His Majesty watching the proceedings from a pavilion near by. The representative appointed is usually the Minister of Agriculture. Under the auspices of the rural officials the ceremony is now conducted at one or two important provincial centres at the same time as at Bangkok, the principal rôle being filled by a local official especially selected for the honour by the King.

(The propitious day, hour, minute, and second having been duly announced by the Brahmans, the field of operations is made ready. The ground is carefully cleared of all grass and weeds, three decorated poles are planted upright in a line pointing east and west and the corners of the field are marked off with slight frames of bamboo trellis-work, those barriers well-known to be impassable by evil spirits. A lofty arch, also of bamboo, called the "Jungle Gate," is erected near one corner of the ground and near it is a thatch-roofed shed in which are raised two altars, to one of which bronze images of Shiva, Vishnu,

Laksmi, and other Brahman deities are carried in procession from the temple where they abide, while upon the other is placed an effigy of the Buddha, called *Phra Kandarai*, reputed of special efficacy in the matter of procuring good rains. To these images is fastened a white cord which passes out of the shed and across the field in various directions, connecting up with the "Jungle Gate," the corner trellis-work screens and the bamboo poles. The night before the ceremony is passed by the Brahmans at the foot of one altar and by certain Buddhist monks before the other, in prayer and invocation, the results of which, passing along the white cord, charge the whole field with a current of sanctity of such strength as must infallibly demoralise any malevolent spirit attempting to trespass upon it. At the side of the field opposite the "Jungle Gate" stands the decorated royal box, surrounded by seats for the nobility and having near it a pavilion for the ladies of the Court.

At an early hour of the day fixed, the populace, dressed in its best, begins to collect about the sacred spot where, solaced by the ice-creams and fruit of itinerant Chinese vendors, it settles down to a lengthy enjoyment of the pleasures of anticipation which a Siamese audience always enjoys almost as keenly as it does those of realisation, and which it would not miss on any account. The waving, many-hued scarves, and the gay *panung* worn by both sexes alike, lend colour to the warm-skinned, black-haired crowd, and in the morning sunshine, make the scene a brilliant one. Soon, a detachment of the Royal body-guard marches up preceded by its band, and amid martial shouting of orders, takes position on the edge of the field. Later, the strains of the National Anthem announce the arrival of Majesty, and soon after, the King enters his pavilion and the ladies and officers of the Court settle themselves in strict order of precedence around, behind and below him.

Suddenly a wave of commotion passes over the crowd, which presses closer round the edge of the field, the erratic strains of the military brass band cease abruptly, and upon the new-born silence the thin high-pitched note of one small flageolet comes across the sunlit plain, heralding the approach of the chief actor in the ceremony. A three-barred refrain in a plaintive key is played on the flageolet, and repeated over and over again in alternation with the throbbing beat of twenty muffled drums, to which weirdly impressive accompaniment, the music of ancient Siamese ceremonial, the Minister of Agriculture approaches, carried shoulder-high upon a throne at the end of a procession of trident-bearers, bowmen and spearmen, costumed as warriors of the brave days of old. The procession passes on to the field, and the Minister descending from his throne makes obeisance to the King and then disappears to offer a prayer before the altars in the shed. A pair of oxen, gaily caparisoned in red velvet and gold-thread harness, is led forward and yoked to a plough resplendent with gilding and glass spangles, the fore-end of which curves up from under the yoke and terminates in a carved figure-head, and, when all is ready, the Minister emerges, glittering in the cloth-of-gold and the jewelled conical crown of Royal ceremonial dress, and wearing an embroidered skirt, to which considerable importance attaches. This skirt is one of three that the Minister has found neatly folded and laid before the altars and one of which he must wear during the ceremony.* The skirts are of different length, and if that which the Minister has chosen is the longest, there will be too little water next year. Conversely, if he has chosen the shortest, there will be too much water, wherefore it is the anxious desire of every one to see when he appears that he has put on the third, which portends the average. Having walked round to show his clothes, the Minister prostrates himself again before Majesty, and rising,

takes the plough handle. The attendants of the oxen now urge them forward and lead them round the field, the ploughshare resting lightly on the earth and making the slightest of furrows.

After three circles have been made, following the direction of the sun, the Minister is joined by four ancient dames, selected from amongst the noblest dowagers in the country, who carry baskets of seed rice, and from these he takes the grain and scatters it as he goes. Three more circles are thus accomplished, holy water being sprinkled upon the earth by an attendant, and the completion of each circle being announced by the blowing of a Conch shell by one of the officiating Brahmans. A sufficiency of seed having been cast abroad, the plough is stopped, when with one accord the onlookers, guards and all, burst on to the field, and with eager shouts fall to picking up the precious grain. The presiding officer and his old ladies make a rush for the shell but, before they can reach it, are surrounded and thoroughly searched, amid peals of laughter, for any grains which may be adhering to their clothes. The scene which ensues is a striking one. With the object of securing a few grains of this seed, which, on account of its sacred nature, is said to surpass the best fertilizer when mixed with the seed-grain of the cultivator, men, women, and children tumble over each other in the wildest confusion, the fruit-sellers leave their baskets to join in the scramble, the sixteenth century appears on this page and try conclusions with the modern and military body-guard, while from every point of vantage cameras rake the field. The excitement continues till not a grain is left upon the ground when the crowd retires and the Minister, presiding the Royal pavilion prepared for the occasion. This consists in the placing of small quantities of various grains, rice, maize, millet, peas and beans, also grass and vessels containing water and oil, and spirit, on flat

trays upon the ground before the King, and in leading up the oxen, now released from the gilded plough, and encouraging them to eat. The animals are watched with interest, since of the grain of which they shall eat most, the crops of the ensuing year will be poorest, and all are naturally eager not to miss this straight tip from the spirit-world. The result is, however, annoyingly indefinite for, the animals being apparently unequally amenable to spiritual influence, it often happens that one of them merely snuffles round the baskets, while the other appears desirous of eating the whole lot if allowed to do so. They are, however, soon hustled off, their attendant Brahmans seemingly satisfied with their performance, notwithstanding the evident mystification of the general public.

Attention is now directed towards the altar in the shed, round which fervent prayers are being intoned by the Brahmans, while one of their number, half concealed behind the altar, licks a lead pencil and furtively writes upon a piece of foolscap. Presently this one comes forward, and in a loud voice interprets the signs which have been observed during the ceremony. "Rice will be plentiful, the millet crop will be poor, the rains will be sufficient, though the highest level at flood-time will be lower than last year." Hereupon the band strikes up the National Anthem, His Majesty, who, together with the Court, has been served with breakfast while waiting for the verdict, departs in his motor-car and the crowd spreads out fanwise, streaming across the fields towards the city. Everybody is contented and happy, the more so because millet is cultivated scarcely at all in these parts, while it is remembered that the floods were just about six inches too high last year. The old-time warriors dribble off informally, the body-guard marches away and the Minister joins a group of friends, smilingly receives their congratulations and amateur photographic attentions, and shortly offers

to them the edifying spectacle of a medieval Asiatic monarch trying to consume an iced soda without overbalancing his diamond-studded crown.)

Judging by available records and by the narrative of travellers in Siam, it would seem that for the last seven or eight hundred years at least, the ploughing ceremony has changed very little, if at all, in essentials, though, in some of its details, alterations appear to have been made from time to time. In the days when Sukothai, or alternately Sawankalok, was the capital, that is, prior to the fourteenth century A.D., the proceedings were very dignified and very royal. The Brahmans assembled and escorted the sacred images of the gods from the temples to a temporary erection on the spot selected for the ceremony. The King, accompanied by the royal mothers and their princely offspring and by a selection of the most beautiful ladies of the Household, came in state to see the ploughing from a specially constructed royal pavilion. Then the Ocyā Bholadheb Tipodi, a high officer of rank equivalent to the modern Minister of Agriculture (*Chao Phaya Baludep*), garbed as a prince and accompanied by soldiers, musicians, and a host of lesser officers and attendants and preceded by Brahmans blowing conch-shells and scattering sacred parched rice, appeared to conduct the ceremony. Three ploughs, decorated respectively with gold, silver and red cloth, were used simultaneously, the foremost being held by the Ocyā Bholadheb Tipodi. The blessed seed was carried out and scattered by a group of honourable old ladies, the Brahmans preceded the ploughs sprinkling holy water and blowing conch-shells. Afterwards, the bullocks that had drawn the ploughs were invited to eat from a selection of different agricultural products and thus provide omens of scarcity or the reverse. Then, as now, the king was served with food during the ceremony, and the seed scattered over the sacred field was all picked up and

carried away by the populace to mix with their own seed grain.)

Of the *Raak Na* ceremony during the Ayuthia period there are several written descriptions extant in Siamese, from which it appears that changes in the incidental details were introduced from time to time during that epoch. The principal amongst these was the absence of the King, who, in fact, remained within his palace during the celebration, now extended to three days, and invested the chief officiating nobleman with certain quasi-regal powers, as, for instance, the right to levy market tolls in the capital and a tax on all carts and ships bringing merchandise into the city during the three days of the ceremony. The holder of this ephemeral prerogative seems to have had numerous satellites of various degree to assist him in the exercise of his powers, and since the people strongly resented the arbitrary conduct of these, the three days of the ceremony were prolific of disputes, scimmages and tumult generally, when the safety of the lives and property of the citizens was apt to be precarious. This custom of partial delegation of the royal authority, which bears some analogy with the appointment of the 'King of the Bean' for Twelfth Night celebrations in mediæval Europe, continued into the Bangkok period but finally became discredited and was put an end to by the grandfather of the present sovereign, who restored the practice of the Sukothai period, going himself to the ceremony and rewarding the services of those who performed it with small money payments. There is no evidence that either in the Sukhothai or the Ayuthia periods, Buddhist monks or images of the Buddha, whether as rainmakers or otherwise, took any part in the proceedings, which were then purely Brahmanic.

The **Water Festival at Paknam** near the mouth of the Menam Chao Phaya river, which takes place annually at the end of the rains, consists of the

presentation of offerings at the beautiful island *Wat* opposite that town, and of boat-races and other aquatic games on the waters of the great river round about it. Though to all appearance a purely Buddhist observance, it is held by many to be, in fact, the scarcely recognisable survival of an ancient Brahman Royal Ceremony, the object of which was to invoke the Celestial Powers to disperse the waters of the annual floods, their presence for irrigating or watering the crops being now no longer necessary. Bowring quotes Diégo de Couto, who wrote of Siam in the latter part of the sixteenth century A.D., as describing the magnificent progress of the King when he went forth in full state to order the subsidence of the waters, the races and sports that then took place, the great concourse of people assembled, and the triumphant return to the palace after the ceremony; adding that this was considered one of the greater state functions of the year. The festival thus described more than 300 years ago, is still observed, correct in every detail, by some of the Sultans of the Malay Peninsula adjacent to Siam, whose devout Mahomedanism is tinctured, apparently a good deal more than they themselves know, with the Brahmanic rites and traditions of their pre-Islamic forefathers. The ceremony at the *Phrachedi Klang Nam* or 'Mid-stream Pagoda,' though attended by large crowds and observed with the utmost regularity, has quite lost, if it ever really had it, all significance as a Brahman invocation to the Spirit of the waters, and has fallen from the status of a Royal function to something in the nature of a popular beanfeast extending over three days.

Phallicism. The student of Siamese customs will notice here and there, half hidden amongst the superstitious beliefs and practices of the people, quite plain indications of former and actual observance of Phallic worship. The emblems of this cult are to be seen in some of the most celebrated monasteries and

Wat enclosures, in close juxtaposition with the effigies of the guardian spirits of the towns, and in the temple of Shiva at Bangkok ; being known and worshipped under the name of Phra Sephaling. They are also in evidence, strung on a cord and tied round the waist of most baby boys. The cult, now largely discredited and scarcely understood by the people, is, of course, pure Brahmanism, and doubtless a large number of the inhabitants of the country at one time worshipped Shiva in this somewhat impudent but anciently recognised form. The emblem is usually found to have small patches of gold leaf sticking upon it, placed there by women in the hope of promoting their own fruitfulness, but beyond this there is nothing to show that the cult is now more than an interesting vestige of ancient and unsophisticated times.

SPIRIT WORSHIP.

As though the demands of Buddhism and Brahmanism were not sufficient to satisfy all reasonable yearning towards religious exercises and observances, the Siamese must needs recognise the existence of an immense number of more or less supernatural invisible beings, the ghosts of deceased men and women (and sometimes of animals) whose corporeal being, owing to some special cause, has not been properly dissolved by death and of whom, therefore, an immaterial but semi-human part persists for a variable period after death, and who can only be prevented, by continual propitiation or deception, from indulging an insatiable proclivity for interference with the schemes and desires of mankind. Fortunately, their power is subject to many and peculiar limitations, so that subterfuge and trickery which would not deceive a child are often sufficient to outwit them and frustrate their nefarious designs, while those which are proof against cheating can generally be propitiated by the smallest and cheapest of offerings. Such beings

include, besides the dryads and kelpies with which the imagination of mankind has ever peopled the forest, the flood and the fell, the ghosts of countless individuals, unusual circumstances of whose life or death have compelled their subsequent interest in mundane affairs. Some are more malevolent than others; some include the whole of mankind within their sphere of action, while others confine themselves to a single community or family; but all are liable, if neglected, to exercise their powers to the detriment of their votaries. •

Many passages in the Life of the Buddha show that the presence of such beings had long been recognised when Buddhism began, and was accepted by that philosophy as among the ordinary facts of existence, though the Buddha deprecated their propitiation and strictly enjoined upon the members of his Holy Order to have nothing to do with them under any circumstances.

These existences, to whom the generic name *Phi* (*Pec*) is applied, are not to be confounded with the angels or *Téwada*, sometimes also called *Phi* by the indiscriminative, the inhabitants of the different Heavens on, or around, the Mount Meru, who, though also superhuman beings evolved from the merit of human individuals, form a huge class altogether apart from the ordinary *Phi*, and represent the subsequent existences of all those who, without attaining to the higher rewards of advanced meditation, have, by leading good lives and observing the commandments, lost almost all present interest in the world of men and entered into the enjoyment of the paradise which rewards the virtuous.

The *Phi*, in fact, are simply the ghosts and goblins, the elves and little-people who were the objects of the worship of mankind in the dark and distant ages before the development of simple animism into that widespread polytheistic religion of which Brahmanism

was one branch, and who still inspire the only manifestations of religion amongst the wild men of many countries, including the hill-tribes of Siam and Further India generally. They have, of course, been greatly toned down and their cult has long been shorn of much of its more rugged and uncouth aspect, but every now and then an example of stupid cruelty due to superstitions regarding the *Phi* and their attendant witchcraft and magic will crop up to show that the wild beliefs born of ignorance and terror, which once swayed all mankind, still persist below the veneer of later and more sane philosophies. The analogy between the Siamese cult of the *Phi* and the animistic beliefs which once prevailed in Europe is so complete as to force itself continually upon the notice of even the most casual observer.

To describe at all fully the different kinds of *Phi* that vex the lives of the people would require many volumes, and, moreover, would entail an amount of inquiry and research which has never yet been devoted to the subject. Comparatively few *Phi* are known to the general public and the mediums (*Mot kon Song*) who could doubtless give accurate descriptions, based on actual acquaintance, of the manners and appearance of the more retiring, are not easily found and, when met with, are often coy about revealing their mysteries. Of the commoner sorts, however, that is, those whose manifestations are the most frequent, it is possible to give a few details which, though meagre and altogether incomplete, may serve to indicate the nature and endowments of the hosts of malevolent 'spooks' in the midst of which the Siamese, by due propitiation, manage to lead an existence which, it must be admitted, is on the whole far from uncomfortable.

Ghosts and goblins form the class of *Phi* which is best known, probably because of their perhaps not unnatural predilection for hanging about the haunts

of men. Foremost among these are the ghosts which have constituted themselves the guardians of communities and public institutions. Such are frequently the ghosts of people of note, the founders of that which they watch over, or of high officials killed in the defence of strong places, etc., but some of them are the spiritual remainder of mere nobodies, converted into immortal beings of much honour and power by the simple operation of having their mortal throats cut. It is a well authenticated fact that in many countries of the Far East it was formerly considered necessary, when any royal or national building was to be erected, to bury one or more human bodies, either alive or freshly killed for the purpose, beneath the foundations. The histories of Siam make frequent reference to the practice, and early European writers, especially Jeremy van Vliet, who described Ayuthia in the seventeenth century A.D., have recounted with details more or less gruesome, the observance of this ancient form of sacrifice. Time, with its new ideas and associations, has killed this once honoured custom as dead as is, say, witch-burning in England, but the memory of the *Phi* so made, lives on and the guardian spirits of ancient gateways, causeways, bridges, dams, still have their shrines, their propitiatory services and, in some cases. their peculiar rites.

The *San Chao Lak Muang* or "Shrine of the Lord of the Pillar of the Country" is an institution without which no Siamese community is complete. Amongst the ruins of all the ancient cities which aspired at any time to independence, the site of the shrine can be pointed out, while in some it still remains partially or wholly entire. In the dark interior of these holy places stood a pillar of stone or of wood, the pivot of the national existence as it were, surrounded by effigies of the tutelary deities and of one or more *Phi* guardians, usually of the kind manufactured by the sacrifice of human life and devoted thenceforth to

the general care of the place and to the protection, individually or in the mass, of all its inhabitants. The *San Chao Lak Muang* of Bangkok stands near the Grand Palace and consists of a small building surmounted by a *Phraprang*. A richly gilded wooden pillar stands in the middle of the shrine with Phallic emblems, the effigies of angels and of *Phi* grouped round it, and the offerings of votaries scattered all about it. The guardian *Phi* are freely consulted by persons in search of lucky numbers to buy in private and public lotteries of which there are many, or of tips for the local races; while childless women seek there, by their own peculiar rites, to promote that change in their condition which they and their lords desire.

In Bangkok there was, until recently, a second shrine in the nature of *San Chao Lak Muang* but of even greater power and celebrity. This was the *San Chao Haw Klong* situated near Wat Poh. King Rama I, the founder of the present August Dynasty, built a tower on the top of which drums and gongs were beaten to arouse the citizens in case of fire or other danger, and erected a triple shrine close by. A *Phi* was made by the sacrifice of a suitable individual and was installed there with all honour under the title of Chao Chét, and especially devoted thenceforth to the protection of the city. All but the foundations of the *Haw Klong* or 'Hall of Drums' has long since disappeared, and the shrine itself was removed about the year 1919 to make room for military barracks. When the latter stood, it contained an image of Chao Chét in the traditional costume of *Tewada*, flanked by Phra Khan mounted on an owl, a manifestation of Shiva (Phra Isuen) as the four-armed Lord of Darkness and Death, and by Phra Sông Muang and Phra Seu Muang, intercessory goblins of Brahmanic origin. The shrine was dilapidated and crumbling and had apparently never been repaired since it was set up a hundred and twenty odd years ago. Nevertheless,

it was much frequented and Chao Chét was, and still is, far from being forgotten. Gold-leaf appeared in patches on the shrine walls, both inside and out, and on the bodies of the images, the features of Chao Chét himself being entirely obliterated beneath the incrustation which had accumulated on his face at the hands of five generations of supplicants. The horses, cattle, slaves and theatrical representations (the last a special weakness of the *Phi*) which had been promised in return for favours asked and which had been paid in the form of the small paper dolls and toys which all spirits are popularly supposed to mistake for the real articles, were piled in heaps amongst burnt-out joss-sticks and withered garlands, and, stuck upon the doors and inner walls, were written prayers for aid in all sorts of private matters. One of these last, on letter-paper headed by the printed address of a well known firm, asked for a fortunate issue to a business speculation, and in another the writer announced himself by name as having committed a murder and asked that the prosecution at his approaching trial might break down and he be acquitted. Chao Chét and his attendant spirits have found refuge, since the removal of their shrine, in the *San Chao Lak Muang*, where they continue to receive the attentions of their votaries. Official recognition of Chao Chét takes the form of periodical invitation cards issued by royal command and requesting the honour of the presence of the *Phi* at forthcoming religious ceremonies. As lately as 1910 A.D., such cards could be seen stuck on the door of the shrine. It is not known how they are delivered now.

Every house in Siam has its private tutelary spirit, though it appears that this is not always the ghost of a celebrated ancestor but sometimes a brownie or elf who has found his way in amongst the family and settled down to a comfortable sinecure, confident of honourable treatment and of a share of all the good

things that may be going, and well aware that should he by chance be neglected, the first misfortune will bring his votaries to his feet with apologetic offerings and humble petitions for the withdrawal of ill-will. For the accommodation of such *Phi*, a miniature house, about the size of a small birdcage, is set up either on the verandah or on a post in a shady corner of the garden, and before it incense sticks are burned, and flowers, fruit and rice are offered to avert misfortune in the daily round of domestic affairs. The approach of crises such as the birth of a child, the annual school examinations or the drawings of one of the frequent State-sanctioned lotteries, is marked by the appearance before these little shrines of more considerable offerings such as horses, slaves or cattle, though these take, of course, the convenient form of rough images in clay or other material. The shrines are called *San Phrapoom*, which means 'Shrine of the Sacred Grove,' and correspond exactly to the Burmese *Nat Sin*.

In every Siamese building constructed of wood, that is in the vast majority, the corners of a small square of cloth may be seen hanging from the top of each of the house-posts, where the rafters rest upon them. No sensible person omits these little cloths when building, for without them, the elves who inhabited the tree before it was felled and converted into timber would probably enter the posts and so attach themselves to the house, causing sickness and all manner of trouble to the inmates. The cloths, however, effectually prevent this, though why a being who has power to enter into solid timber should be defeated by a little piece of calico is one of those points on which the professors of spirit-worship avoid discussion.

The *Phi Lawk*, or common spooks, whose chief business it is to appear before and terrify children and adults left alone in the dark, are a numerous body. These have been known to emphasise their

presence by tickling and pinching, and it is for fear of them that solitary wayfarers usually sing or speak aloud in would-be confident tones, when walking by night, more especially on dark and lonely roads.

The country is, of course, full of ghosts of people murdered or devoured by wild animals, *Phi Hong*; of women dead in child-birth, *Phi Pai*; of men who have died away from home and not had proper obsequies; of those who have died suddenly of cholera, *Phi Ha*, and so forth. These are all specially malevolent and difficult of propitiation. It is well to be continually on guard against them, for they assume all sorts of seemingly innocent forms in order to lead the unwary to destruction. Their bite or scratch is said to cause sickness which is frequently fatal. Some *Phi*, such as *Phi Pok Ka Long*, delight in leading travellers into the clutches of wild beasts; others, *Phi Ta Moi*, cause sudden darkness in which people lose their way and fall over precipices or encounter other grave accidents. The *Phi Pai* are impervious to all propitiation or cajolment but pursue mankind with untiring vengeance. Against the *Phi Song Nang*, the ghosts of ladies who have loved too dearly and too often, young men cannot be too carefully warned, their obsession being to tempt susceptible male creatures from the paths of virtue by appearing before them in entrancing but diabolical beauty, afterwards devouring any who fall victims to their wiles. The *Phi Kum Ngeun* are those who watch over treasure hidden in caves, in ruined pagodas, or buried under the earth, and who, unless most carefully approached, strike death and disease (with the aid, may be, of bad air or chilling damp) into adventurers who would rob them of their charge. The *Phi Kra Seu* make a speciality of annoying ladies in the condition by some called interesting.

There are elves, fairies and demons of such great antiquity that all tradition as to their original human

condition has been lost. These vary greatly in the extent of their hostility towards mankind. The *Phi I Koi*, whose breath carries malignant fevers, the *Phi Hoi*, bearers of cholera; and *Phi Sok*, who bring the smallpox, are demons of the most implacable disposition, who usually ignore the offerings which are made to them and the devices by which it is sought to delude them, but who may sometimes be frightened away by a horrible face drawn with whitewash on a sooty cooking-pot stuck on a post by the pathway. They can also be dealt with by clubbing, or shooting when their presence and their exact position have been ascertained by witchcraft. Sanitation has also been known to put *Phi Hoi* and *Phi Sok* to flight, but is a weapon which, until recently, has found little favour with the Siamese. The *Phi Nong Mai* who live in trees, and the *Phi Nam* or water sprites, are usually harmless though by no means averse from occasional practical joking at the expense of individuals who too rashly venture into their power. As for the *Phi Narok*, the demons who stoke the fires of hell and apply the scientific tortures provided in those regions, the only way to avoid their attentions is to be good, and so preclude the necessity for a sojourn amongst them.

The science of witchcraft is very closely connected with *Phi*, and in fact the chief pretensions of its numerous professors, from the saintly Brahman down to the humblest *Maw Du*, or seer, consist in the intimacy of their acquaintance with, and their knowledge of the ways and powers of, all the species of this vexatious genus. In all cases of sickness the *Maw Du* is called in to discover the nature and individuality of the *Phi* who is at work, and thereafter to exorcise it. When the various charms and spells which are brought to bear, fail to relieve the patient, a second *Maw Du* is summoned, who probably condemns the original diagnosis and institutes a course for the expulsion of some different kind of *Phi*. Music and

bathing, are among the commonest prescriptions for most diseases, while the practitioner often attempts to blow the spirit away, to wave it off with green boughs or to entice it forth by whistling to it.

The manufacture and sale of charms brings wealth to the *Maw Du*, but unfortunately Buddhist monks sometimes spoil the business by the keenness of their competition. Love-charms, identical in composition with those supplied by the gypsies to rustic English lovers, bewitchment by means of wax images stuck full of pins or sharp thorns, charms against gunshot wounds, sword-cuts and snake-bite, and to ward off sickness of all kinds, are habitually used, and though often sadly ineffectual and disappointing, are vastly popular. Many people are known to possess familiar spirits called *Phi Phoh* which they can cause to enter the bodies of their acquaintance and to afflict the same with sickness. The *Maw Du* is in his element when called upon to deal with such, and discovers with surprising ease the author of the malady, more especially when paid to saddle the guilt upon some obnoxious member of the community who is forthwith robbed and turned out of his house to become a social leper.

Hardly any action of everyday life is undertaken without some previous or subsequent recognition of a supernatural influence supposed to be actively interested in the matter, a recognition which may amount to no more than a perfunctory genuflection, or comprise an elaborate service of propitiation. Offerings are made to the *Phi* of the sea to secure fortunate fishing and a good haul of fish is recognised by the burning of incense round about and inside the returning boats. To fell a tree or to take a wild bees' nest is never safe without previous exorcisms, while the shortest journey requires the propitiation of the household *Phi*. In times of epidemic it is usual to invite the *Phi* which is causing the disease

to a feast in a diminutive hut or boat specially constructed, and, when he is busy eating, to convey him, hut, eatables, and all, to the nearest river and there set him adrift in the hope that he will not be able to find his way back again. But it is in matters connected with agriculture that the greatest precautions are observed. Not only are the household *Phi*, the village guardian spirit, and the *Phi* of the neighbouring jungle all carefully propitiated with offerings, but steps are taken to keep any maliciously disposed spirit off the land altogether. To prevent an immaterial being from trespassing on one's land would seem a difficult feat, but is in fact one of the simplest. There are more ways than one of accomplishing it, but none is more efficacious than the erection of a small bamboo stick with a piece of cloth fixed to it at each corner of the land, which, if done at exactly the right moment and with accompaniment of just and proper invocations, is never known to fail, all instances where unaccountable poorness of crop or other untoward circumstance denotes the presence of malign influences, being of course attributable, not to the inefficacy of the barrier, but to some oversight or error which must have occurred in the rites attending its erection.

In the centre of the patch of carefully smoothed bare ground which serves each cultivator for a winnowing floor, a figure of straw resembling a man is erected. This is called 'Ta Pu,' or 'Grandfather,' and is intended to represent the special family *Phi* of the peasant. Before it is placed, a little altar made of split bamboo and a few choice ears of rice are deposited there from time to time during the continuance of harvesting operations.

Principal among charms used for warding off evil are the little plaques of silver with cabalistic words scratched on them, rolled into cylinders and strung on a cord worn over one shoulder and under the other,

or round the waist, and especially relied upon by women who wish to escape the attentions of *Phi Kra Sen*. Small medallions inscribed with Pali texts and called *Bai Sema*, worn by children, tattooed marks consisting of minute spots, or of *Unalom*, a sacred sign that looks like a sort of inverted mark of interrogation, and tiny pieces of charmed silver or gold let into the skin to render the wearer bullet-proof, are also very common. It was reported that these last were served out to the troops during the troubles with France in 1893, and although that report was not true, it is certain that many of the soldiers privately supplied themselves with them, while of the Expeditionary Force that went to France in 1918, it is safe to say that every man carried a charm of some kind. In fact, the Siamese are no more willing to run into danger without an amulet on which to rely for protection than are Breton fishermen, Italian miners, Portuguese muleteers, Canadian trappers, Irish rebels, Spanish banditti, soldiers of all nations; in other words, than all sorts and descriptions of men all the world over.

In the hour of his anguish a man will recklessly bribe the spirits beyond his means, and when restored to equanimity will fulfil his vows by placing before the *San Phra Poom*, tree, or other habitat of the spirit of his invocations, a tiny paper effigy of the promised offering which can be bought for an infinitesimal price in any bazaar. The poor deluded spirits never apparently awaken to this childish deception, but judging by the hundreds of little clay or paper horses, cattle, carts, slaves, etc., which accumulate round some shrines, are always ready to be taken in again.

From the wide extent of the cult of the *Phi* and from the fact that the Buddhist monks themselves are so frequently mere devil-dodgers and charm-mongers, it is evident that the amount of whole-hearted spirit worship which the Siamese combines with his Brah-

mano-Buddhism is very great, and that, for all the observances of this latter and in spite of its many beautiful tenets, the official religion is little more amongst the country people than a top veneer, which the least calamity rubs off, exposing the immemorial animist beneath it. Not only in every house, but in every forest glade, in the fields and even in the crowded streets, are to be seen the teakwood *San Phra Phum*, a foot or so high, erected for the accommodation of some *Phi* or other. The very *Wat* themselves are not exempt, for in the rural districts spirit offerings are sometimes exposed on the walls of these and even within the sacred precincts.

Notwithstanding the teachings of the Buddha that the power of all ghosts, goblins or elves is mere illusion, the Siamese calmly persists in his superstitions and beliefs concerning them. He hears the spirits of the drowned wailing over the water and trembles at the hearing, he glimpses the woodland dryads peeping and glancing amongst the forest trees and argues sickness or death therefrom; his toes are nibbled in his sleep by mischievous ghosts and his crops suffer from the depredations of an infinity of marauding elves. The thunder and the lightning, the rain and the storm at sea, all accidents and misfortunes, are to him, clear manifestations of *Phi*, which the philosophy of the Buddha is powerless to gainsay. And so he goes his way, intent upon the placation and exorcism of his imaginary tormentors after the manner of his forefathers, keeping all the time a wary eye open for the chance of assisting chicanery by which he inconsistently believes the most powerful spirits may often be deceived.

OTHER RELIGIONS.

Though Buddhism may not hold the sole place in the hearts of the Siamese, its influence has proved an insurmountable obstacle to the proselytising

efforts of foreign missionaries who have attempted to make converts among the people and who have been present in the country ever since the beginning of the seventeenth century, A.D. About 1620, or possibly rather earlier, the Portuguese settlers in Siam introduced Roman Catholic priests into the country, but it was not until 1662 that any serious effort was made to obtain converts to Christianity, such effort being then due to the founding of a French Mission to the Far East and to the selection of the capital of Siam as its headquarters. From that time down to the present, Roman Catholic Christianity has maintained a footing in the country but, in spite of the general tolerance with which it has been treated and the encouragement which it has received from more than one king, it has failed to impress itself upon the Siamese as in any way superior to the national beliefs. Moreover, by mixing in politics, the priests have more than once brought the country within measurable distance of foreign subjection and, by their flagrant attempts to embroil Siam with France five and twenty years ago, brought upon their Mission a deep and bitter dislike from which it has only partially recovered. Consequently, though there are now two Roman Catholic bishoprics, many churches and a multitude of priests in Siam, the congregations consist mostly of Chinese, Annamese, Kambodian and other foreigners, a certain percentage of whom originally entered the fold in order to become French *protégés* and so escape from the ordinary duties of Siamese citizenship. Perhaps the best thing resulting to the country from the Missions' 260 years of labour, intrigue, devotion, self-sacrifice and quarrelling, is the excellent secular education now provided by it for the young of both sexes in its colleges and convents.

Since the early part of the nineteenth century, an institution known as the American Presbyterian Mission has been at work in Siam. Its members are

widely dispersed over the country and, by reason of the medical department which is one of the outstanding features of the Mission, have done a great deal of good in introducing simple remedies amongst the country people and in promoting the study of medical science by the Siamese generally. Their schools have also been of much value to the country in the past but, like the Roman Catholic, this Mission has had comparatively small success in the main object of its existence, and, after nearly a hundred years of work, has few Siamese amongst its flock.

In the latter part of the seventeenth century A.D., an attempt was made to convert the whole country to Islam, the Arab merchants frequenting this part of the world, of whom there was a considerable colony at the capital, believing that the success with which Mohammedanism had been introduced amongst the Malays might be repeated on a large scale with the Siamese. In this supposition, bred of their enthusiasm for the faith, they were, however, mistaken and their doctrines were so far from being acceptable to the people as to give rise to a violent popular commotion in the course of which a large number of Moslems achieved the blessed state of martyrdom.

The extraordinary religious tolerance shown by the Siamese has been often misinterpreted both as indifference towards their own religion and as a leaning towards that of other people ; but such tolerance is in fact the result of a contemptuous indifference rather than of approval, and of the certainty in the minds of the people that no religion can compare with Buddhism as they know it, and that consequently there is little fear of any sane follower of the Teacher being led away by the arguments of the missionaries, whether of Christianity, Mohammedanism, or any other form of religious belief.

APPENDIX I

LIST OF ANIMALS

MAMMALS

<i>English</i>	<i>Siamese</i>	<i>Name of Order, genus or species</i>
Ape	Kang	Hylobates sp.
Armadillo, <i>see</i> pangolin		
Ass	La	Equus asinus
Bat	Khang khao, Kuk nu	Cheiroptera sp.
Bear	Mi	Ursus malayanus
Bison (gaur)	Ngoa kathing	Bos gaurus
Buffalo	Kwai, krabeu	Bos bubalus
Buffalo (wild)	Kwai pan	" "
Cat	Meao	Felis domesticus
Cat (wild)	Meao pa	Felis sp.
Cat (bamboo) or Mūsang	I hen	Paradoxurus
Cat (leopard)	Seua dao	Felis bengalensis
Cat (fishing-)	Seua pla	Felis viverrina
Civet Cat	Chamot	Viverra sp.
'Cow'	Ngoa	Bos indicus
'Cow' (wild)	Ngoa pa	Bos sondaicus
Deer (barking)	I Keng	Cervulus muntjac
Deer (brow-antler)	Lamang	Cervus eldi
Deer (hog-)	Kwang	Cervus porcinus
Deer (sambar)	Neua	Cervus hippelaphas
Deer (so-called 'musk')	Neua tarai	Cervus
Deer (Schombergk's)	Chaman	Cervus schombergki
Deer (mouse-) Chevrotam	Kachong	Tragulus sp.
Dog	Ma	Canis familiaris
Dog (wild)	Ma ching chok	Canis sumatranus or C. rutilans
Dolphin	Pla kaho	Delphinus sp.
Dugong	Mu chulé, Duyong	Halicore dugong
Elephant	Chang	Elephas indicus
Elephant (white)	Chang pheuak	" "
" (tuskless)	Chang sitau	" "
Flying Fox	Kang koa	Pteropus edulis
Gibbon	Chani	Hylobates spp.
Goat	Hpaa	Capra sp.
Goat-antelope (serow)	Liáng pa	Nemorhædus sp.
Hare	Kratai	Lepus penguensis

English	Siamese	Name of Order, genus or species
Hog	Mu	Sus sp.
Hog (wild)	Mu pa	"
Horse	Ma	Equus caballus
Jackal	Ma nai	Canis aureus
Lemur (flying)	Bang	Galeopithecus volans
Lemur (slow loris)	Ling lom	Nycticebus tardigradus
Leopard	Seua tao	Felis pardus
Marten (so called)	I nē	Helictis personata
Mole	Tun	Talpa sp.
Mongoose	Hen plava	Herpestes urva
Monkey	Ling	Macacus and Semnopithecus spp.
Monkey	Ling karng	" "
" (red face)	Ling sane	" "
"	Makata	" "
Mouse :	Nu lek	Mus. sp.
Mouse (shrew)	Nu ring	Crociodura sp.
Mouse (field)	Nu phuk	Mus sp.
Mule	Lah	Equus asinus
Musk-rat	Chamot chieng	Crociodura sp.
"	Nu pi	"
"	Nu tong khao	Mus concolor
Otter	Nak	Lutra sp.
Pangolin	Klet nim	Manis javanica
Porcupine	Men	Hystrix hirsutirostris
Rat	Nu	Mus sp.
Rat (bamboo)	Aan	Rhizomys Babius
Rhinoceros	Raat	Rhinoceros spp.
Sheep	Kaa	Ovis spp.
Squirrel	Ka rauk	Sciurus sp.
Squirrel (white)	Ka taa	"
Tapir	See sett	Tapirus malayanus
Tiger	Seua	Felis tigris
Whale	Pla wan	Balaena

BIRDS.

Adjutant	Nok ta karoom	Leptoptilus argala
Barbet (red throat)	Nok ti tong	Capitonidae. Xantholoma
" (lineated)	Nok paradok	" cyanops
Bittern	Nok yang krank	Botaurus sp.
Bluebird	Nok pakam nam ngeun	Brachipodius irena
Bluetail bee-eater	Nok tap ka	Merops
Bulbul	Nok proat	Brachipodius spp.
Co-il	Nok kawow	Cuculidae Eudynamis
Cormorant	Ka nam	Phalacrocorax carbo
Cormorant (lesser)	Ka nam	" pygmæus
Coucal (crow pheasant)	Nok poot	Cuculidae Centrocccyx
Crane (Sarus)	Nok karien	Grus antigone
Crow	Nok ka (I ka)	Corvus insolens
Cuckoo	Nok khet tow	Cuculidae. Cuculus

English	Siamese	Name of Order, genus or species
Dove	Nok khao	Columbidæ Turtur
" (red)	Nok khao fai	" "
" (barred)	Nok khao jawa	" Geopelia
" (white)	Nok khao kheh	" sp.
Drongo	Nok seng seow	Dicrurus atra
" (racket-tailed)	Nok seng seow hang	" dissemmurus
Duck	Pet	Anatidæ sp.
" (wild)	Pet ngaup	"
" (brahmany)	Pet tate (or thet)	"
Eagle	Nok inthri	Falconidæ spp.
Eagle (fishing)	Nok irah	Falco haliatus
Egret (white)	Nok yang sawoy	Ardeidæ. Bubulcus
" (lesser white)	Nok yang kin pling	" sp.
" (black winged)	Nok yang rauk	" "
Fantail fly-catcher	Nok katom tin	Rhipidura
Finch	Nok krachok	Passeridæ spp.
Francolin	Nok kratah	Francolinus sinensis
Goose	Hahn	Anatidæ sp.
Guinea fowl	Kai tayk	Numidinæ sp.
Gull	Nok saun hoi	Laridæ sp.
Gull	Nok nang nun	"
Heron	Nok kwæk	Ardeidæ. Nyctriornis
Heron	Nok kasa	" sp.
Heron	Nok kasa fai	" sp.
Hornbill (great)	Nok ngeuak	Dichoceros bicornis
Hornbill (lesser)	Nok katao	Anthrachoceros albirostris
Hoopoe	Nok chapah	Upupa
Humming bird	Nok si champoo	Dicaeum
Ibis	Nok pak hang	Tantalidæ sp.
Ibis (white)	Nok klett hoi	" "
Ibis (pelican)	Nok saun hoi	" "
Jacana	Nok prik	Parridæ sp.
Jacana (pheasant tailed)	Nok prik	" "
Jungle fowl	Kai pa	Phasianidæ. Gallus ferrugineus
Kingfisher (stork billed)	Nok kam kawm	Alcedinidæ. Pelargopsis
Kingfisher (black cap)	Nok pak lak	" Halcyon
Kingfisher (pied)	Nok kratane	" Ceyx rudis
Kite (brown)	I yeaow dam	Falconidæ. Milvus
Kite (brahmany)	I yeaow deng	" Haliastur
Kite (pied)	I yeaow nok kao	" Elanus
Kite (sparrow hawk)	I yeaow nok kao	" Accipiter
Kite (black-legged)	I yeaow ta krai	" Microhierax
Kite (kestrel)	I yeaow yawa	" Tinnunculus
Magpie robin	Nok katao lom	Turdidæ copsychus
Mynah (pied)	Nok king krông	Sturnidæ. sp.
Mynah (house)	Nok saleeka	" Acridotheris
Mynah (Siamese)	Nok eang	" "
Mynah (talking)	Nok kun tong	" Gracula
Nightjar (common)	Nok nam tang	Caprimulgus
Nightjar (eared)	Nok pak kwang	Cap: lyncornis

<i>English</i>	<i>Siamese</i>	<i>Name of Order, genus or species</i>
Oriole	Nok chamin leuang on	Oriolus melanoccephalus
Osprey	Nok awk	Pandion
Owl	Nok kao ku	Bubonidæ. Scops
Owl (horned)	Nok sampan tit	" • Orientalis
Owl (dwarf)	Nok kao meawow	" • Glaucidium
Owl (barn)	Nok sike	" Strix
Parrot (Malay)	Nok kaling	Psittacus
Parrot (rose ringed)	Nok keao	Palæornis sp.
Parrot (black head)	Nok nori	" "
Parrot (var.)	Nok kratoa	" "
Parrot (lorikeet)	Nok keao mong	Loriculus sp.
Partridge (wood)	Nok krata tong	Tetrao caloperdix
Peafowl	Nok yung	Pavo muticus
Pelican	Nok kratung	Pelicanus spp.
Pheasant (fireback)	Nok kai fa	Phasianidæ sp.
Pheasant (argus)	Nok wah	" Argus
Pheasant (peacock)	Nok phaya law	" Polyplectron
Pigeon	Nok pirap	Columbidæ sp.
Pigeon (imperial)	Nok moom	" Carpophaga
Pigeon (green)	Nok kao kiew	" Treron
Pigeon (purple)	Nok kao phlow	" Alsecomus
Pigeon (emerald dove)	Nok kao tong •	" Chalcophaps
Plover (carbuncled)	Nok kratai ti wit	Charadriidæ. Holopterus
Plover (golden)	Nok som	Charadrius fulvus
Quail	Nok kum	Tetrao Turnix
Rail	Nok i lom	Rallina
Raven	Nok i kah	Corvus corax
Roller (blue jay)	Nok takap	Coracias affinis
Sandpiper	Nok i koi	Totaniidæ spp.
Seagull	Nok nang nom	Laridæ spp.
Shama (robin)	Nok kang kane	Turdidæ. Cisticincla
Shrike	Nok hoa seua	Lanius
Snipe	Nok som	Charadriidæ. gallinago
Snipe (painted)	Nok som	Rhynchæa [spp.
Skylark	Nok ton lom	Alauda spp.
Sparrow (house)	Nok krachok	Passer indicus
Sparrow (tree)	Nok krachok	" montanus
Sparrow (hedge)	Nok krachok ki kwai	Accentor sp.
Stork (black neck)	Nok kot pleung	Xenorhynchus asiaticus
Stork (white neck)	Nok kot pleung klaap	Dissura episcopus
Swallow	Nok yang ane	Hirundo sp.
Swallow (edible nest)	Nok i ane	" Collocalia
Swift	Nok nang ane dam	" Cypselus
Tailorbird	Nok krachip	Orthotomus sartorius
Tailorbird (lesser)	Nok krachip suan	" "
Teal (whistling)	Pet nam	Anatidæ: Dendrocygna
Teal (cotton)	Pet lap kaa	" Nettapus
Thrush (blue rock)	Nok king kane	Turdidæ. Monticola
Thrush (laughing)	Nok chek kohok	Timeliidæ Garrulax
Turkey	Kai Nguang	Meleagris sp.
Vulture	I reing	Vulturidæ. Pseudogyps

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English	Siamese	Name of Order, genus or species
Vulture (black)	I reng chao pha	Vulturidæ. Otogyps
Wagtail	Nok mun tai	Motacilla sp.
Water-hen	Kai nam	Rallidæ sp.
Water-hen (red cap)	I kóng	Rallidæ, Porphyrion
Weaverbird (of rice bird)	Nok krachap	Ploceus baya
Woodcock	Nok som kaa	Charidriidæ, Scolopax
Woodpecker	Nok hoa kwan	Picidæ. spp.

REPTILES, BATRACHIANS, ETC.

Blind-worm	Ngu din	Typhlops braminus
Chamæleon (so called)	Montok	Calotes sp.
Crocodile	Chorakhē or takhē	Crocodilus porosus
" horned	Takhong	" sp.
	Takaut	Crocodilus siamensis
	{ Kop	{ Ranidæ spp.
Frog	{ Kop chak	{ "
	{ Kop pow (or pao)	{ "
(bull)	Eung ang	Rana tigrina
" (amphibian)	Phat	" sp.
" (green)	Khuat	" sp.
Monitor	Hia or cha koat	Varanus sp.
Lizards gecko	Chung choi	Hemidactylus sp.
" large gecko	Tokay (or Tukka)	Gecko verticillatus
" (garden)	King ka	Varanus (agamidæ)
" (grass)	Ching lane	"
Skink	Yaa	Scincus sp.
Snake (cobra)	Ngu hao maw	Naia tripudians
" (tree)	Ngu sai man phra in	Dipsadomorphus dryas
" (water)	Ngu pla	Hypistas hydrinus
" (jumping)	Ngu khwang khawn	Homalopsis spp.
" (rock)	Ngu chong ang	Psammodynastes
" (carpet)	Ngu ngot	Lycodon sp.
" (green)	Ngu khio	Dryiophis sp.
" (green viper)	Ngu khio hang mai	Lachesis sp.
" (hamadryad)	Ngu hao talan	Naja sp.
" (singing)	Ngu phi keo	"
" (Russell's viper)	Ngu hao fai	Vipera russelli
" (krait)	Ngu klong	Bungarus fasciatus
" (python)	Ngu leuam	Python reticulatus
" (so-called "footed")	Ngu tin	Ichthiophis glutinosus
Toad	Khang khok	Bufo sp.
Tortoise	Tao na	Testudo
"	Tao siping	" elongata
Turtle	Kriu, tao	" sp.
" (longnecked river)	Taphap nam (Mahnlai)	Chitra indica
" (sea)	Tao charamet	Chelonia virgata

FISHES.

Archer fish	Pla seuu	Toxotes jaculator
Carp (barbel)	Pla kaa	Cyprinidæ, Barbus sp.

<i>English</i>	<i>Siamese</i>	<i>Name of Order, genus or species</i>
Carp	Pla wien	Cyprinidæ, sp.
" (crappie)	Pla kapông	" sp.
" (red crappie)	Pla kapông deng	"
" (black crappie)	Pla kapông dam	"
" (white crappie)	Pla kapông khao	"
" (speckled crappie)	Pla kapông sem	"
	Pla ki eng	Siluridæ sp.
	Pla taypo	"
	Pla kot	"
	Pla kang penan	"
Cat fish	Pla duk	"
	Pla intri chang	"
	Pla intri lai sao	"
	Pla intri bang	"
Conger eel	Pla lai	Murænidæ sp.
Eel	Pla kam puat	"
Fighting fish	Pla kat	Betta pugnax
	Pla tabi en	Pleuronectidæ spp.
	Pla lin naa	"
Flat fish	Pla i sup	"
	Pla charamet	"
Flying fish	Pla kapen	Exocoëtus sp.
Globe fish	Pla pak pow (or pao)	Gymnodontes tetrodon
Goby	Pla pu	Gobiidæ
Mud skipper	Pla tin	Periophthalmus
	Pla chelat	Notopteridæ sp.
Mullet	Pla kabauk toh	Mugilidæ
"	Pla kabauk lek	"
Narwhal	Phayun	Monodon sp.
Perch (climbing)	Pla Duk	Spirobranchidæ
Pilchard	Platu	Clupeidæ
Saw fish	Pla chanak	Pristidæ sp.
' Scomberesox '	Plakatong how (or krathung hao)	Scombresocidæ • (hemiramphus)
	Pla kem	"
Shark	Pla chalam, paa	Carcharidæ
" (dogfish)	Pla chalam nu	"
" (spotted)	Pla chalam thong	"
" (hammerhead)	Pla chalam tabien	Zygoena malleus
Skate and Ray	Pla kabane pak laam	Rajidæ sp.
" (large Skate)	Pla kabane chao dong	" "
" (thorn back)	Pla kabane kanun	"
Snake-head, spoon fish	Pla chawn	Ophiocephalidæ sp.
"	Pla kang	"
"	Pla kasang	"
' Squamipen '	Pla chang yiep	Squamipennes spp.
Sting ray	Pla kabane lambit	Trygonidæ sp.

INVERTEBRATE ANIMALS, INSECTS, ETC.

Ant	Mot lay	Formicidæ spp.
" (karingga)	Mot tamoi	"
" (small red)	Kipbin	"

<i>English</i>	<i>Siamse</i>	<i>Name of Order, genus or species</i>
Ant (white)	Pluak	<i>Termes lucifugus</i>
Atlas moth	Phi seau chang	<i>Attacus atlas</i>
Bêche-de-mer	Sarai	<i>Holothuridæ</i>
Bee	Pheung	<i>Apis</i> sp
" (dammar)	Mun	" "
" (carpenter)	Phamon	" "
Beetle	M'leng thu	<i>Scarabæus</i> sp
" (long horned)	Duang lium	<i>Longicornis</i> sp
" (green)	M'leng thap	<i>Buprestis</i> sp
Bluebottle fly	M'leng wan	<i>Musca</i> sp
Bug	Mang huna	<i>Cimex lectularis</i>
Butterfly	Phi seua	<i>Lepidoptera</i>
Centipede	Ia khap	<i>Scolopendridæ</i>
Cicada	Rit (reet)	<i>Cicadidæ</i>
Cockroach	Mamung	<i>Blattidæ</i>
"	M'leng sap	"
Conch shell	Kap	<i>Triton</i>
Coral (black)	Kapa bang ha	<i>Gordonidæ</i>
Cowry	Bia	<i>Cypæa</i> sp
Crab	Pio, pu chalay, krakun	<i>Brachyura</i>
Crayfish	Kolai	<i>Macrura</i>
Cricket	Changrit, challik	<i>Gryllidæ</i>
Cuttlefish	Da ham	<i>Octopus</i> sp
"	Pla meuk	" "
Dragon fly	Meng paw	<i>Libellulidæ</i>
Earwig	Meng kharieng	<i>Euplexopteridæ</i>
Firefly	Hing hoi	<i>Lampyridæ</i> spp
Flea	Mat	<i>Pulex</i> sp
Gadfly	Leuap	<i>Tabanidæ</i> sp
Gnat	M'leng now (or nao)	<i>Simulidæ</i> sp
"	Ran	"
"	Rin	"
Grasshopper	Re rai	<i>Acrididæ</i> sp.
Hornet	Tan	<i>Vespa</i> sp
House fly	Maleng wi	<i>Musca</i> sp
King crab	Meng da	<i>Limulus moluccanus</i>
Leech	Pling, pling chalay	<i>Hirudo</i> sp
Louse	Rai	<i>Pediculina</i> sp
"	Len	" "
"	Hao	" "
Mantis	Chakriachan	<i>Mantis</i> sp.
Medusa (jellyfish)	Meng kraphrun	<i>Medusa</i> sp.
Midge	Sut	<i>Simulidæ</i>
Mole cricket	Meng krachon	<i>Gryllidæ</i>
Mosquito	Yung	<i>Culicidæ</i>
Moth	Phi seua	<i>Lepidoptera</i>
Mussel	Hoi	<i>Unio</i> sp
" (large)	Hoi kraphong	" "
Oyster	Hoi irom	<i>Ostræa</i> sp
Prawn	Kung	<i>Macrura</i> sp.

<i>English</i>	<i>Siamese</i>	<i>Name of Order, genus or species</i>
Pearl oyster	Muk da (or ta)	Ostræa sp.
Scorpion	Prisachik	Scorpio sp.
"	Wichatika	" "
"	M'leng Fang	" "
"	Meng pong	" "
Shellfish	Krarang	
Shrimp	Kung foi	Macrura sp.
Silkworm	Nawn mai	Antherea sp.
Snail	Hoi kong	Helicidæ
Spider	M'leng mum	Arachnida spp.
"	Luta	
Stick lac insect	Ki krang	Coccus lacca
Tapeworm	Payat	Tenia solium
Teredo	Prieng	Teredo sp.
Wasp	Tan	Vespa sp.
Weevil (rice)	Phia	Curculionidæ
Worm	Nawn	Lumbricidæ

APPENDIX II

LIST OF PLANTS.

<i>English</i>	<i>Siamese</i>	<i>Name of Order, genus or species</i>
Abrus	Takram or makram	Abrus precatorius
Almond tree	Ton krabauk	Terminalia catappa
Amaranth	Kammagi	Amarantus oleraceus
Areca	Mak	Areca catechu
Arrowroot	Rak samsip	Maranta arundinacea
Bael	Matom	Agathotes Chirayta
Bamboo	Mai pai	Bambusa sp. also Dendrocalamus sp.
" (dwarf)	Mai ruak	" "
" (short-jointed)	Mai pai pa	" "
"	Mai si suk	" "
" (smooth)	Mai liang	" "
" (long jointed used for blow-pipes)	Mai sang	" "
Banana	Kleui	Musa sapientum
Banyan	Ton mai chai	Ficus indica
Bean	Toa	Phosphocarpus sp.
' Betel '-vine	Phlu	Piperaceæ sp.
Blackwood	Ton mai dam	Dalbergia latifolia
Bougainvillea	Dauk i suen	Bougainvillea
Bo-tree (pipul)	Ton pho	Ficus religiosa
Boxwood	Ton kaao	Buxus sinensis
	Mai put	" "
Breadfruit tree	Ton sakay	Artocarpus sp.
Brinjal or egg plant	Ma khua khaw	Solanum melongena
" (wild)	Ma ik	" ferox
Cactus	Krabom pet	Cereus hexagonus
Camphor tree	Ton karabun	Blumea sp.
Cane (rattan)	Wai	Calamus sp.
Caoutchouc creeper	Katang ka tiew (or katiu)	Echites sp.
Capsicum	Phyik	Capsicum sp.
Cardamom	Krawan	Alpinia sp.
Castor-oil plant	Ton lahung	Ricinus communis
Champac	Ton champa	Michelia champaca
Chestnut	Khao lat	Castanea sp.
Cinnamon	Op chem	Cinnamomum sp.
Clove	Kanpalu	Eugenia caryophyllata
Cockscomb	Ton nguan kai	Celosia sp.
Coriander	Ton pakcher	Coriandrum sp.
Cotton	Ton fai	Gossypium sp.
" (kapok)	Ton nun	Bombacidae, spp.
" "	Ton ngui	" Ceiba pentandra
Cotton-tree	Chimphali	Bombax maliebris

APPENDIX

English	Siamese	Name of Order, genus or species
Cow-itch	Ma mui	Mucuna pruriens
Croton	Ton kasawn	Croton sp.
Croton oil plant	Ton salaut	Croton Tiglium
Cucumber	Teng kwa	Cucumis sp.
"	Pak chilow	"
Custard apple	Noi na	Anona reticulata
" (bullock's heart)	Noi nong	" sp.
Cutch	Shi ziet	Acacia catechu and spp.
Date palm	Inthaphalam	Phoenix dactylifera
Datura	Ton krabeau	Datura talula
Durian	" lamphong	" stramonium
Duckweed	Ton thurien	Durio zibethinus
Earthnut (peanut)	Chauk	Lemna spp.
Ebony	Toa lisong	Arachis hypogaea
Entada creeper	Ton maklua	Diospyros ebenum
Eugenia	Ton sabar	Entada scandens
Euphorbia	Ton champu	Eugenia sp.
Fennel	Ton salat dai	Euphorbia sp.
Ferns	Pak chi	Nigella sativa
Fig	Pak kawt	Filices
Fir-tree	Ton ma deua	Ficus sp.
Fungi	Ton cham cha	Pinus sp.
Gamboge tree	Het	Fungi
Gardenia	Ton ma dan	Garcinia Hanburyi
Garlic	Ton dauk chin	Gardenia coronaria
Ginger	Kathiem	Allium sativum
Gourd (white pumpkin)	Khing	Zingiber officinale
" (bottle)	Fak thong	Benincasa cerifera
" (snake-)	Buap	" sp.
Gram	Nam tao	Lagenaria vulgaris
Grass	Teng thai	Trichosanthes sp.
" (alang)	Toa bengala	Phaseolus sp.
" (elephant)	Ya	Gramineae spp.
" (reed)	Ya ka	"
Guava	Ton aw	"
Gum benzoin	Ya kem ; krachut	"
Gum-kino	Ton farang	Psidium sp.
Hemp (bhang)	Ton kanyam	Styrax benzoin
Hibiscus	Ton mai padu	Pterocarpus sp.
Hopea	Pan (fibre) Kancha	Cannabis sativa
Indigo	(drug)	
Ixora	Ton chaba	Hibiscus sp.
Jackfruit tree	Ton mai takh-ien	Hopea odorata
Jasmine	Khram	Indigofera tinctoria
Jujube tree	Ton kem	Ixora sp.
Lagerstroemia	Ton chanun or kanon	Artocarpus integrifolia
	Mali	Jasminum sambac
	Ladah	" sp.
	Ton bosa	Ziziphus jujuba
	Ton tabak (kabek)	L. spp.

<i>English</i>	<i>Siamese</i>	<i>Name of Order, genus or species</i>
Langsat	Ton langsai	Lansium domesticum
Leek	Kuchai	Allium sp.
Lemon	Ton makrut	Citrus sp.
"	Ton lamyai	" longanum
"	Ton ma-ngoa	" sp.
Lemon grass	Yah hawm	Andropogon schoenanthus
Lettuce	Pak kat hawm	Lactuca sativa
Lichee	Ton linchi	Nephelium litchi
Lime	Ton manao	Citrus sp.
Lotus (white)	Bua phan	Nymphaea sp.
" (red)	Bua penan	" "
	Also kamut, chuk, kusay kosom, kokamut, kokasok, etc.	
Lotus (sacred, bean)	Dauk bua, d.luang Phrathum, chongkon, etc.	Nelumbium speciosum
Magnolia	Ton champa-champi	Magnoliaceae
Maize	Khao phot	Zea mais
Malay rose-apple	Champu	Eugenia sp.
Mango	Ton namuang	Mangifera indica
Mangosteen	Ton mangkhut	Garcinia mangostana
Mangrove	Ton mai sakè (same)	Rhizophoraceae spp.
Marigold	Dao reuang	Calendula officinalis
Melon	Teng tai	Cucumis melo
Melon (water)	Teng mo, teng phap	Citrullus spp.
Millet	Khao thong	Panicum spp.
Mimosa (sensitive plant)	Ton kreteup	Mimosa pudica
Mint	Serana	Mentha sp.
Moon-flower	Dauk ban yen	Jalapa sp.
Mulberry	Ton mon	Morus sp.
Mustard	Pak kat	Brassica sp.
Naseberry (sapodilla)	Ton lamot farang	Achras sapota
Nipa	Ton chak	Nipa fruticans
Nutmeg	*Ton chann	Myristica fragrans
Nux vomica	Ton be chi	Strychnos sp.
'Olive' or Hog-plum	Ton ma kauk	Spondias mangifera
Onion	Hua hawm	Allium sp.
Orange	Som	Citrus spp.
Orchids	Kleui mai	Orchidaceae
Palm (betel)	Ton mak	Areca catechu
" (palmyra)	Ton tan	Borassus flabellifer
" (date)	Inthapalam	Phoenix dactylifera
" (coconut)	Ton ma phrao	Cocos nucifera
" (sago)	Ton saku	Corypha sp.
" (book)	Ton lah	" "
" (talipot)	Ton pipayte	" umbraculifer
Papaya	Ton malako	Carica papaya
Papermaking tree	Ton koi	Trophis aspera
Parsley	Pak silow (or chilao)	Umbelliferae
Passion flower		Passiflora sp.
Pepper	*Phrik thai	Piper nigrum

English	Siamese	Name of Order, genus or species
Pepper (long)	Phrik tayte	Piper longum
Pineapple	Separot	Ananas sativa
' Plum ' (marian)	Ton maprang	Mangifera (Bonea) oppositifolia
Poinciana :	Ton hang nokyung	Poinciana spp.
Pomegranate	Ton thaptham	Punica granatum
Poppy	Dauk fin	Papaver sp.
Potato	Man farang	Solanum tuberosum
„ (sweet)	Man thayte	Ipomoea batatas
	Man nok	
Radish	Hoa kat	Raphanus sp.
Rambutan	Ton ngau	Nephelium lappaceum
Rice (plant)	Ton khao	Oryza sativa
„ (paddy)	Khao pleuak	„
„ (husked)	Khao san	„
„ (cooked)	Khao	„
„ (glutinous)	Khao ms	„
„ (red)	Khao deng	„
Rose	Ton kulap	Rosaceæ
Roseapple jambosa	Ton champu	Eugenia sp.
Rosewood	Ton mai pa yung	Xylia xylocarpa
Sandalwood	Ton chan	Santalum album
Saffron	Faran	Crocus sativus
Sapan wood	Ton mai fang	Cesalpinia sp.
Screwpine	Lam chi eak	Pandanus odoratissimus
Sesamum	Nga	Sesamum sp.
Shaddock (pummelo)	Som oh	Citrus decumana
Shorea	Ton mai inthanin	Shorea robusta
Soapnut	Makam dikwai	Acacia concinna
Sugarcane	Ton oi	Saccharum officinarum
Sunflower	Dauk than tawan	Helianthus spp.
Tamarind	Ton makkahm	Tamarindus indica
Tamarind (manila)	Ton makhm tayte	Inga dulcis, or Pithecolobium
Tamarisk	Ton chanuk	Tamarix sp.
Tapioca, cassava	Ma's marang	Manihot utilisima
Tea	Ton cha	Thea sinensis
Teak	Ton mai sak	Tectona grandis
Tobacco	Ya sup	Nicotiana tuberosa
Tomato	Makhua tayte	Lycopersicum esculentum
Tuberosc	Dauk saun klin	Ploianthes tuberosa
Turmeric	Khamin	Curcuma longa
Water lily (see Lotus)		
Water hyacinth	Pak chawa	Eichornia speciosa
Willow	Ton krai nam	Salix sp.
Woodoil tree	Ton nymmanyang	Melanorrhoea usitata
Wheat	Khao sali	Triticum vulgare
Yam	Kloi ; man meu sua ; Man kao ; man sao, e.c.	Dioscorea spp.
Yellow-wood	Ton krak	Jacca sp.

APPENDIX III

LIST OF MINERALS

<i>English or Scientific Name</i>	<i>Siamese Name</i>
Agate	Moralai
Alabaster	Sila khao
Alum	Sahn son
Amber	Seng sieng ampan
Amethyst	Phoi si muong
Ammonia	Nam dang prasan dibek
Antimony	Ra phluang
Arsenic	Sahn ru
Asbestos	Pa apaha ka sila
Bismuth	Ra chao cheng
Blodstone	Hin leut
Bluestone	Chunna si
Borax	Nam prasan theng
Brass	Thong leuang
Catseye	Phet ta meao
Chalk	Din sau pong
Clay	Din neo
Coal	Than hin
Copper	Thong deng
Copper sulphate	Chun si
Coral	Hin karang
Crystal	Keao kelaup
Diamond	Phet
Earth	Din
Emerald	Mora lot
Flint	Hin lek fai
Galcna	Takca dam
Garnet	Thap thup nam khun
Gold	Thong sam
Gold and copper alloy	Nak
Goldleaf	Thong bai
Graphite	Din sau
Hæmatite	Tao rit pha
Iron	Lek
Cast-	Lek pen
Wrought-	Lek awn
Iron ore	Raa lek
Jade	Yok
Jet	Si nin
Laterite	Hin khao lao
Lead	Takoa
Lignite	Than hin
Limestone	Hin pun
Marble	Hin awn

<i>English or Scientific Name</i>	<i>Siamese Name</i>
Mercury	Parawt
Mud	Khlon
Nickel	Kalai
' Nine Gems ' (the)	Nop kao
Nitre	Din prasan khao
Onyx	Morah
Opal	Muk dah
Orpiment	Din thanan
Pearl	Kai muk
Petroleum	Namman kat
"	Namman din
Pewter	Takoa
Platinum	Thong kham khao
Quartz	Keao
Rock crystal	Hin keao
Ruby	Thap thum
Sal-ammoniac	Nam prasan dibuk
Salt	Kleua
Sand	Sai
Sandstone	Hin sai
Sandstone (red)	Hin sai deng
Sapphire	Nam si kram kawn
Silver	Ngeun
Silver nitrate	Nam ngeun
Silver ore	Raa ngeun
Silver and copper alloy	Ngeun nam hauk
Soapstone	Hin awn
Soda	Dang
Spinnelle	Phloi hung
Steel	Lek kla
Sulphur	Kamma than
Tin	Lek vilat
Tin-foil	Takoa kreap
Tin-ore	Dibuk
Topaz	Busyarakham
Vermilion	Chat
Vitriol	Nam kraut fai
Zinc	Sanka si

APPENDIX IV

TRADE STATISTICS.

Average abstract of the Export and Import Trade returns for the Port of Bangkok for the five years, 1916-17 to 1920-21 :—

EXPORTS.				Value in Sterling at Tcs. 12/- to the £
Articles.		Value in Ticals		
1. Rice	..	96,396,000		£8,033,000
2. Teak	..	8,395,000		698,700
3. Treasure	..	1,227,000		102,200
4. Fish of all kinds	..	2,462,000		205,100
5. Bones, hides, horns of all kinds and ivory	..	3,064,000		255,500
6. Pepper	..	832,000		69,300
7. All other goods	..	12,638,000		1,053,100
8. Re-exports	..	5,156,000		429,600
Total	..	130,170,000		£10,846,300
IMPORTS.				Value in Sterling at Tcs. 12/- to the £
Articles		Value in Ticals		
1. Motor cars and parts	..	2,172,000		£181,000
2. Cement	..	250,000		20,000
3. Chemicals	..	570,000		47,500
4. Petroleum oil	..	4,562,000		380,100
5. Porcelain and Earthenware	..	1,247,000		104,000
6. Paper	..	2,239,000		186,600
7. Coal	..	1,310,000		109,200
8. Cotton goods, all kinds	..	29,396,000		2,449,600
9. Electrical goods	..	1,052,000		87,000
10. Fireworks	..	926,000		77,000
11. Gunny bags	..	4,930,000		410,800
12. Jewellery	..	1,424,000		118,600
13. Tobacco	..	2,350,000		279,100
14. Machinery, all sorts	..	8,943,000		162,000
15. Metal manufactures; copper, brass, zinc, tinware, cast iron, wrought iron, steel, etc.	..	6,313,000		526,000
16. Food and provision; tinned fish, tinned fruit, tinned milk, sugar and all groceries	..	14,673,000		1,222,700
17. Silk	..	4,198,000		349,800
18. Wine, beer and spirits	..	1,967,000		164,000
19. Gold leaf	..	5,036,000		419,000
20. Opium	..	4,014,000		334,500
21. Treasure	..	697,000		58,000
22. Other imports	..	22,491,000		1,874,000
Total	..	114,760,000		£9,563,333

APPENDIX V

TABLES OF CURRENCY, WEIGHTS, MEASURES, Etc

A. SIAMESE CURRENCY

The coins now in use are —

Copper	equal	Satang
Nickel	"	5-Satang piece
"	"	10-Satang piece
Silver	"	Salung, 25 Satang
"	"	Baht or Tical, 100 Satang
Gold	"	Toht, 10 Baht

Paper Currency . 5, 10, 20, 100, 1,000 Baht, or Tical, treasury notes

B SIAMESE WEIGHTS AND MEASURES

Long Measure.

2 Anukrabiet	equal	1 Krabiet
4 Krabiet	"	1 Niu or finger-breadth
12 Niu	"	1 Keup or hand-span
2 Keup	"	1 Sauk or cubit
4 Sauk	"	1 Wa or fathom (full stretch of man's arms)
20 Wa	"	1 Sen
400 Sen	"	1 Yot

One Wa is now generally accepted as equal to two metres so that a Yot equals sixteen kilometres

40 Sen are roughly counted as equal to one English mile, 40.5 would be more accurate.

Square Measure

144 square Niu	equal	1 Square Keup
4 square Keup	"	1 square Sauk
16 square Sauk	"	1 square Wa
100 square Wa	"	1 Ngan
4 Ngan	"	1 square Sen or Rai, equal to 2/5 of an Acre

Measures of Weight

5 Li	equal	1 Hun, the small red seed of Abrus
5 Hun	"	1 Fuang
2 Fuang	"	1 Salung
4 Salung	"	1 Bat (15 grammes)
80 Bat	"	1 Chang
50 Chang	"	1 Hap (pikul) or 133 1/2-lbs Av

Note—Li and Hun are of Chinese origin. Another measure-of-weights table, commonly used in the rural districts, is as follows —

2 Klom	equal	1 Klam
2 Klam	"	1 Pai
4 Pai	"	1 Fuang

And the rest as above

Formerly the Pai, Fuang, Salung and Baht were Coins as well as weights. Pai and Fuang have now, disappeared, Salung is constant and only the

Baht remains, equal to exactly 15 grammes, and the accepted Unit of Weight.

Measures of Capacity.

There is no absolutely fixed table of capacity measure, there being no commonly accepted unit as in the case of weight. The system for measurement of paddy and other food-grains by bulk, on the land, is as follows :—

4 Kham meu (handful) equal	1 Chang-awn
2 Chang-awn	" 1 Thanan (coconut shell)
18-25 Thanan	" 1 Sat (basket)
80 Sat	" 1 Kwien (cartload)

At the rice mills a different table for capacity measurement obtains. It is as follows :—

1 Kham meu equal	1 Kham meu
1 Kham meu	" 1 Laang
2 Laang	" 1 Thanan
40 Thanan	" 1 Tang (bucket)
40 Tang	" 1 Ban
2 Ban	" 1 Kwien

A Rice-mill *Kwien* of paddy is about double the farmer's *Kwien*. For purposes of export trade and revenue the *Kwien* is worked out in terms of *Hap* or pikuls. A rice-mill *Kwien* of paddy being accepted as equal to 16 *Hap* and a Rice-mill *Kwien* of white milled rice as 23 *Hap* in weight. This is mere convention, however, as there is still no legalized standard of weight at this date (1923).

Cubic Measure in the Teak Trade, 1 *Yoh* (the unit) equals 64 *sauk* by 1 *sauk* by 1 *niu*, or about 11½ cubic feet.

The Metric and the English systems are both in common use in most Government Departments and in Commerce.

