

OUR KNOWLEDGE OF KHMER CIVILIZATION A RE-APPRAISAL

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Research on the Khmer past has hitherto been devoted to history, based on epigraphy, and to the history of art, through a systematic analysis of monuments. The wealth of knowledge thus acquired is quite unparalleled in Southeast Asian studies. All Khmer inscriptions have been published and translated,¹ and the history of ancient Cambodia is far more than advanced.² Khmer art, especially during the Angkor period, is certainly the best worked out amongst all the arts of Southern Asia, even including that of India.³ It would seem that from all these sources, there would emerge a general picture of Khmer civilization.⁴

However, to attempt such a synthesis is to realize⁵ that we are but at the beginning of the real task. Not because the pioneers in this field have been inadequate. On the contrary, one can but admire how impressively they have built on the basis of such scanty data. Their achievement offers a splendid contrast with the state of our knowledge of other countries such as Champâ, where so many facts still wait to be worked on. And, as a matter of fact, working hypotheses or brilliant intuitions are

1. G. Coedès : *Inscriptions du Cambodge*. Public. de l'EFEU. Hanoi, Saigon and Paris, 1937-1954, 6 vol.

2. G. Coedès : *Les Etats hindouisés d'Indochine et d'Indonésie*. Histoire du Monde d'E. Cavaignac. Paris, 1949.

3. G. de Coral-Rémusat : *L'Art khmer* . . . Paris, 1940 ; P. Dupont : *La Statuaire pré-angkorienne*. *Artibus Asiae suppl.* XV. Ascona, 1955. J. Bois-Selier : *La Statuaire khmère et son évolution*. Public. de l'EFEU, 37. Paris, 1955.

4. L.P. Briggs : *Ancient Khmer Empire*. American Philosophical Soc. Philadelphia, 1951. G. Coedès : *Pour mieux comprendre Angkor*. Paris, 1947.

5. B.P. Groslier : *Angkor, Hommes, et Pierres*. Paris, 1956; English ed.: *Angkor, Art and Civilization*. Londres, 1957.

constantly being confirmed by new discoveries, which, of course, reflects honour upon their authors and guarantees progress as well.

If there are flaws in our science, our sources are to blame. Khmer inscriptions are few, especially in comparison with the infinite number of Indian lapidary inscriptions. And, what is worse, they consist of panegyrics, in Sanskrit, which, amidst too many hyperboles, convey with an attempted casualness a few facts or genealogies of the royal and priestly families; or they offer texts in Old Khmer, which are more difficult to understand, and which set forth only rules or prescriptions for religious foundations. In any case, it is only the religious and official life of the country which is described, and even they are rather sketchy. All Khmer palm-leaf manuscripts were destroyed, and there is no hope that one will ever be found. As for other possible literary sources—mostly Chinese histories—they are practically all tapped, and, although important, are too laconic to offer more than a cross-check, or eventually fill a gap in the chronological frame-work. The exceptional importance we are obliged to concede to the only text which is more than list of embassies, the account to the traveller Tcheou Ta-kouan,⁶ is sufficient proof of the dearth of this type of material.

Even in the field of history of art we are not altogether at ease. At the beginning of Khmer history, temples and statues were made of wood, and these have entirely vanished. We therefore know nothing of the formation of the Khmer style. Later on, brick and finally stone were used, but only for temples, so that religious structures alone have withstood the ages and are still available for study. But often they are no more than empty shells. The greatest number of their statues, and probably the most important ones, were in metal, as were all cult accessories, and these have almost all disappeared. We have some of them, more than often beautiful ones, in our museums. But, as they are chance finds, and as we still lack systematic excavations for basic chronology, it is rather difficult to identify and to date them. All

6. P. Pelliot; *Mémoires sur les Coutumes du Cambodge de Tcheou Ta-kouan*, Paris, 1950.

secular buildings, which were in wood, have been destroyed. And with them wood-carvings and paintings of the greatest importance, but now so many missing links in the evolution of Khmer art.

Moreover, the bulk of this documentation—epigraphic and plastic—belongs essentially to the classical age of Khmer culture; the pre-Angkor and Angkor periods, that is to say, from the Vth to the XIVth centuries. Before—and for that matter after—we know practically nothing.

In the first place, the prehistory of Cambodia—as well as of Southern Laos and Thailand—is still awaiting the spade. A few chance finds or isolated diggings have brought to light scarce material, impossible to classify or even to study. In contrast with the good work carried on in Northern Viet-Nam and the Tranninh and the excellent research in Malaya and, above all, in Indonesia, there is, we must admit, a complete gap in our knowledge of Prehistoric Southeast Asia, whatever brilliant and alluring hypotheses try to explain it as a whole.⁷ Because there are no possible literary sources for this period, we shall have to build solely on systematic surveys and excavations all over this area. Then, and only then, will we be able to apprehend the origin and evolution of Early Man, and to form a picture of his achievements before the Indian influence was felt there.

For there lies the second major problem of our enquiries: the exact impact of Indian culture on Southeast Asia. It is now apparent that the various populations which came under this influence, were not mere "savages" but already had cultures, possibly refined, of their own—as for instance in the case of the so-called Dongson people.⁸ And it is also evident that it was only because they were advanced enough to assimilate Indian civilization.

7. R. von Heine-Geldern: *Urheimat und frühere Wanderungen des Australonesier*. *Anthropos*, 1932, vol. XXVII; P.V. van Stein Callenfels: *The Melanesoid Civilisations of Eastern Asia*. *Bull. of the Raffles Museum*, 1936, ser. B, vol. I, p. 41; R. von Heine-Geldern: *Prehistoric Researches in the Netherland Indies*. New York, 1945.

8. B. Karlgren: *The Date of the early Dong-son Culture*. *Bull. of the Mus. of Far-Eastern Antiquities*, 1942, t. 14, p. 1; O.T. Janse: *Archaeological Researches in Indo-China*. Harvard, 1946-1949, two vol. published.

Otherwise, they would probably have remained untouched, like so many of the hill-tribes of Indochina, living side by side for centuries with higher cultures, and in much closer contact than the Indochinese populations were with India, and which nevertheless are still at the same primitive level because they are not sufficiently advanced to absorb superior intellectual or social patterns.

A proper estimate of Indian influences, then, will not be possible till we know more precisely who was influenced; moreover, we must know who influenced whom. A lot has been written on this matter in the last fifty years,⁹ but little of it has been firmly established. Like biological evolution, Indian expansion is more visible in its effects than in its history, and no one has yet proved in detail how it worked. After all, our knowledge of India itself during this period is still insufficient. Too often medieval, if not modern, India is unconsciously taken as a yardstick. The danger should be obvious. India, whatever may be the legend of its "immobility," has changed quite a lot over twenty centuries, and the India, or, better, the various parts of the Indian continent, which have played a role in this expansion, were not what they are now. This is especially true of its religions—so important for our enquiry—and perhaps even more true of its social structure. As a matter of fact, it could perhaps be said, without too much of a paradox, that medieval India with its ossified society could not have "indianized" Southeast Asia, for it would probably not have expanded overseas.

Happily enough, an enormous wealth of research, mostly that of Indian scholars, has recently been carried out, and we are beginning to have a better knowledge of the history of ancient India, the formation and the evolution of its religions, as well as of the arts which expressed them. As a model, recent work by Mr. K.

9. G. Ferrand : *Le K'ouen-louen*. *Journal Asiatique*, juil.-août 1919, p. 15; B. Ch. Chhabra : *Expansion of Indo-Aryan Culture*. *Jal of the As. Soc. of Bengal*, 1935, Letters, I, p. 54; W. Stutterheim : *Indian Influences in old-Balinese art*. Londres, India Soc., 1935; G. Coedès : *Etats hindouisés . . .*, *op. cit.* : pp. 33 sq.; R.C. Majumdar : *Ancient Indian Colonisation in South-East Asia*. Oriental Institute, Baroda, 1955, etc.

Bhattacharya is worth quoting, for he is trying to find for Khmer borrowings the exact Indian sources, both in space and time.¹⁰ In the field of art, for instance, we know a great deal more about Amaravati and Pallava styles—the main sources of the various types of plastic art of Southeast Asia. We are personally engaged in this field of research, and we hope some day to furnish new evidence in this field. But a great deal more must be done; for instance, we must have a better estimate of the part played by South India in this connection.¹¹

We shall have also to dissect the exact process of Indian expansion, why it happened and how. New discoveries have already thrown new light on the subject; perhaps this fact has not yet been fully grasped. We refer to the latest archaeological discoveries in South India.¹² The fruitful excavations of Sir Mortimer Wheeler have brought out the enormous trade which took place during the first century of the Christian Era between the Mediterranean and India.¹³ If, as everything suggests, the bulk of this trade was in gold, spices, perfumed woods and gums, we know that India itself could not produce them in sufficient quantities. It is likely, therefore, that Indian traders looked for other fields of production and, because they were usually from the southeastern coast of the continent, they began to sail for Southeast Asia, which filled the bill for these commodities. Beside the many

10. K. Bhattacharya: *La Secte des Pāśupata dans l'ancien Cambodge*. *Jal Asiatique*, 1955, vol. CCLVIII, fasc. 4, p. 479; ID.: *Etudes sur l'iconographie de Banteai Samrè*. *Arts Asiatiques*, 1955, t. III, fasc. 4, p. 294; ID.: *Notes d'Iconographie khmère*. *Ibid.*, 1956, t. IV, fasc. 3, p. 183.

11. See, for instance: K.A.N. Sastri: *South-Indian Influences in the Far-East*. Bombay, 1949, and: ID.: *History of South India*. Londres, 1955, 2d ed.

12. R.E.M. Wheeler: *Arikamedu: An Indo-Roman Trading Station on the East coast of India*. *Ancient India*, July 1946, n° 2; J.M. Casal: *Sites urbains et funéraires des environs de Pondichéry*. Paris, 1956; ID.: *Fouilles de Virampatnam-Arikamedu*. Paris, 1949.

13. H.G. Rawlinson: *Intercourse between India and the Western World*. Cambridge, 1916; E.H. Warmington: *The commerce between the Roman Empire and India*. Cambridge, 1928; P. Meile: *Les Yavanas dans l'Inde tamoule*. *Jal Asiatique*, 1940-41, p. 80.

probable factors already known—political exodus,¹⁴ religious proselytism—,¹⁵ trade now appears definitely the most important cause of Indian expansion.

But the significant factor, from our point of view, was that Indian traders, if they wanted to achieve the goal for which they sailed, had to settle more or less permanently on the shores of Southeast Asia. They could sail only with the monsoon, and could not therefore come back before the next monsoon, at the earliest. Thus, they had to stay at least one year in foreign lands. They were looking for goods which were scarce, hard to gather in sufficient quantities for a profitable cargo, and they were dealing with populations who were probably shy, and unorganized economically or technically to face such a brisk impact. In fact, it is likely that Indians had themselves to gather many of these products, as for instance tin in Malaya, which was probably mined by them. All these factors determined the settlement of Indian seafarers in more or less permanent establishments. These were not "colonies" in the modern political meaning of the term, nor were they, it seems, established by military means. But they brought to the very door of local peoples Indian culture, the more effectively because it was brought peacefully.

This permanent installation of Indians had another consequence, hardly ever suspected, but which is perhaps the most important one. Ships in this trade being what they were, and the staple food of Indians, rice, being not transportable, because it would have fermented, the travellers had to produce in their ports of call food for their stay as well as for their return journey. We know that peoples easily change their mental

14. L. de La Vallée-Poussin: *L'Inde aux temps des Mauryas et des barbares, Grecs, Scythes, Parthes et Yue-tchi. Histoire du Monde d'E. Cavaignac*. Paris, 1930.

15. S. Lévi: *Ptolémée, le Niddesa et la Bṛhatkathā. Etudes Asiatiques*... 25^e An. de l'EFEO. Hanoi, 1925, vol. 2, p. 1; ID.: *Les "marchands de mer" et leur rôle dans le bouddhisme primitif. Bull. Assoc. Amis de l'Orient*, 1929, n° 3, p. 19; ID.: *K'ouen-louen and Dvīpāntara. Bijdr.*, 1931, t. 88, p. 627; ID.: *Maṇimekhalā, divinité de la mer. Bull. Letters Acad. Belgique*, 1930, p. 202; K.A.N. Sastri: *Agastya. Tijdsch. Bat. Gen.*, 1936, vol. 76, p. 503.

habits or religions, and especially their political ideas, but that they do not readily change their diet. The Indian is a member of a strongly structured society where food habits are closely knitted with religious and mental attitudes. It is therefore likely that the settlers recreated "cells" of Indian life, wherever they established themselves, exactly according to the pattern of their original homes. That is to say self-subsistent settlements, with Indian collective (if not sometimes political) structures, and social patterns, theoretically, at least, for they certainly married local girls, and finally with the necessary sanction for the whole, temples and priests. In other words, they established themselves exactly as they—or for that matter the Chinese—still do nowadays, as the Indian quarters from Rangoon to Saigon, from Djakarta to Phnom Penh, from Singapore to Bangkok bear witness. If not one such Indian settlement has yet been excavated, this supposition is nevertheless strongly supported by the various effects of Indianization. For instance, it is clear that the first locally made temples and statues of Southeast Asia were exact copies of Indian models. It was therefore necessary for the local workmen to have, initially, real models before them, which presupposes Indian temples on the spot.

On the other hand, everything seems to point to the fact that, by this time, the aboriginal peoples of Indochina were more or less food-gatherers, rather than permanent farmers, and for that matter more often mountaineers than plain-dwellers, or, if they were the latter, only fishermen established on the coastal sand-folds. For plains, in South Indochina, then meant swampy deltas or flooded alluviums, which could not be cultivated without extensive drainage or a water-control system. But Indians themselves were past masters in these techniques, as is clearly shown by their works in Pallava country, or in Ceylon.¹⁶ And they

16. L. Brohier: *Ancient irrigation works in Ceylon*. Colombo, 1930, 3 vol.: C. Minakshi: *Administration and Social life under the Pallavas*. *Memoirs of the A.S.I. Madras*, 1938.

very probably used them for their own food production in Southeast Asia, thus teaching the art to the local populations and giving them a basis on which to construct a fixed society and an advanced civilization. Although, again, we cannot prove in detail this aspect of "indianization," there can be no doubt about its effects as one looks down from the air on the extraordinary irrigation network of Fou-nan, which is unique for this time in this area, and cannot be otherwise accounted for.¹⁷ I personally feel that this was the most important gift of India to Indochina, without which all the rest of Indian culture would probably have been useless, for the very reason that it would not have survived.

If we adopt these views, at least as working hypotheses, we can perhaps achieve a better understanding of the whole phenomenon of Indian expansion, which concerned three different areas, and each one at a special level, with entirely different consequences.

The Mediterranean world, then at the height of its cultural and economical power, was the origin of this movement, quite unwillingly and unconsciously, as a matter of fact, for purely economic reasons. It wanted luxury goods, and it paid dearly for them as Pliny the Elder complains.¹⁸ But when, owing to the historical evolution of the Middle East, the road between Rome and the East was severed, the disappearance of the luxury trade was of no consequence or of any cultural significance whatsoever.¹⁹ It was probably not even felt, except

17. B.P. Groslier : *New Discoveries and new alignment on Indochina's past. Proc. of the 8th Pacific Sciences Cong., Anthropol. Div. Quezon City, 1956, vol. 2, fasc. 3, p. 230*; ID.: *Indian Migrations and Cultural diffusion in South-East Asia. 9th Pacific Sciences Cong. Bangkok, 1957, p. 49.*

18. Pliny: *Hist. Nat.*, VI-26; R. Sewell: *Roman coins found in India. J. R.A.S., 1904 p. 591*; R.E.M. Wheeler: *id.*, in *Ancient India*, July 1946, n°2, p.116.

19. As a matter of fact, one can trace Indian influences on certain aspects of Mediterranean thought: see J. Filliozat: *La Doctrine classique de la médecine indienne. Ses origines et ses parallèles grecs.* Paris, 1949; ID.: *Les Relations extérieures de l'Inde. Public. de l'Institut français d'Indologie, n° 2. Pondichéry, 1956.*

in the memory of "spices" that was retained. For, against all obstacles, the trade was later on resumed by the Arab seafarers, and soon by the ships of Venice. When, finally, the Turks definitely cut this immemorial road to silk and spices, Western Europe endeavoured to obtain this luxury again, but now by going southward round Africa, or westward, and discovering America on the way. The appearance of Albuquerque on the coasts of India was merely the consequence of the arrival there of Roman traders some fifteen centuries earlier. But, this time, Europeans themselves went farther east to find the luxury goods they needed. No longer did they use the Indian middle man.

Previously, in the centre of this trade, India had been given the stimulus to supply the rich and important Western market. There again, the consequences were mostly economic. It is probable that the great wealth thus acquired by India, however, played some part in its development about that time. And it is also possible that it was an important factor in the expansion of South India, eventually even of its "aryanization" during the same period. But also, a certain body of cultural influences from the West was brought along the trade road into India. If there is no doubt that Mediterranean influences flourished first of all in Northwest India because it had been already partly westernized by Alexander, the Greco-Bactrian kingdoms and the Kushan invasions, there can be no doubt that the rest of India also felt the effects of this influx. We are not, for instance, altogether sure that the concept of a "greco-buddhist" art must be discarded for that of a "romano-buddhist" one.²⁰ But, on the other hand, we are inclined to admit a real amount of direct Roman influences in Indian art during this period. And it is certain that substantial exchanges took place at the time in the field of scientific thought. On the other hand, it is obvious that India, as soon as it was cut off from the West, became com-

20. L. Bachhoffer; *On Greeks and Śaka in India. Journal of American Oriental Soc.*, Dec. 1941, vol. 64, fasc. 4, p. 228; E. Ghirsmán: *Bégram. Mém. Inst. fais Arch. or. du Caire*, t. XXIX, et *Mém. D.A.F.A.*, t. XII. Le Caire, 1946; Sir Mortimer Wheeler: *Rome beyond the Imperial frontier*. London, 1956.

pletely unaware of it. By the same token it stopped sailing east and forgot its commercial empire as well, so much so that references to it, in its literature, could easily be printed on two or three pages. It is only at the beginning of this century, and in the footsteps of European scholars, that Indians realized that there had been a "Greater India," and started anew to emigrate thither, again on the wings of European colonial and economical domination. They are now proud of this past, quite legitimately, for it was one of peaceful conquest, but they are also, sometimes, a little uncritical as to its real meaning.

As for Southeast Asia, the consequences of this trade were at first not at all economic. Indeed, in payment for the goods they furnished, the peoples of this area received manufactured products, but these were not sufficient to raise their cultural level, or even probably to improve their economic level. As a proof of this, Chinese ceramics or even bronzes are to be found in the same area as early as the beginning of the Christian Era, without having had any noticeable impact. Again, if we look for examples in modern Indochina, we shall understand why. Such populations as the Man or the Mèo have for centuries sold *materia medica* or opium to plain dwellers for silver bullion, but they have never made any special progress for this sole reason. It is well known that a group cannot adopt an important development from another group if it is not, approximately, on the same technological and social level.

Because the peoples of the area were, through this trade, in permanent contact with Indian settlements on their own shores, they learned, and did not forget, the whole structure of higher civilization. They acquired both the technological means that made higher production possible and the social tools for complex societies. They learned writing, and Sanskrit as a universal language, as well as the various sciences necessary for culture, especially mathematics and astronomy. And, because for this type of civilization, religion is essential, they adopted as well Indian

cults. This is what has been aptly called "indianization," but it must be remembered that its economical and technological bases were at least as essential as its intellectual aspects.²¹

At any rate, we can offer solid proofs of this view, and especially archaeological ones. True, very little has been done in this respect, and the task is tremendous. Nevertheless, important steps have recently been achieved. We have now the first report of systematic excavations in Southern Thailand²² and also the first account of Fou-nan antiquities.²³ Interesting research is now under way in Malaya. We have, ourselves, carried out a systematic air-survey of Fou-nan and discovered an extraordinary system of irrigation and cities.²⁴ However, a lot remains to be done, especially in Thailand where the prospects are bright,²⁵ as well as in South Laos, in order to have a better picture of Tchen-la, which was located there.²⁶

It is, in any case, obvious that only archaeology will be able to reveal this past, for there is but little hope of obtaining more texts, which will always be only lapidary ones. And as we have sufficient proof of the success of properly executed excavations, we may hope that, sooner or later, we shall be in a position to write the history of this period.

When this has been done, and only then, we shall be able also to understand fully the classical periods of Cambodia, that is, the pre-Angkor (VIIth-VIIIth centuries) and the

21. See B.P. Groslier : *Indian migrations . . . op. cit.*

22. P. Dupont : *L'Archéologie mène de Dvāravatī*. *Public. de l'EFEO*, 41. Paris, 1959.

23. L. Malleret : *Archéologie du Delta du Mékong*. *Public. de l'EFEO*, 44. Paris, 1959, vol. 1.

24. B.P. Groslier : *New discoveries . . . op. cit.*; ID.: *Milieu et Evolution en Asie*. *Bull. Soc. des Etudes indochinoises*, n^o 27, n^o 3, 3^e trim. 1952, p. 295.

25. P.R.D. Williams-Hunt: "An Introduction to the Study of Archeology from the Air," *Journal of the Siam Society*, XXXVII, Pt. 2, pp. 85-110.

26. G. Coedès: *Nouvelles données sur les origines du royaume khmer : la stèle de Vat Luong Kau . . . Bull. Ecole française d'Extrême-Orient*, 1^{er} sem. 1954, t. XLVIII, fasc. 1, p. 209.

Angkor periods (IXth-XIVth centuries). For there again, although this age seems fairly well known, we must change many of our assessments. And first, as a direct consequence of what we have just said, the real importance of Indian culture in classical Cambodia should be re-appraised. Because Sanskrit is the official language, Sanskrit literature the source of all quotations, Indian art the origin of Khmer art, and Indian religions the models followed in Cambodia, we are bound to interpret the whole of Khmer civilization in Indian terms. But, if the origins and the models were indeed, as we have just pointed out, Indian, nonetheless the Khmers themselves undoubtedly did not necessarily always feel that their culture was Indian, or even trace it back clearly to India. Anyhow, from a certain time onwards, they no longer had direct contact with Indian settlers, who had disappeared, nor, probably, permanent trade with the "mother-country." On the contrary, there is ample evidence that Indian influence—at least by the time of Angkor, from the IXth century onwards—was already entirely assimilated after centuries of Fou-nan, then Tchen-la cultures. Direct intercourse was extremely rare; we know of only a few instances, and they were probably inconsequential.

So thoroughly in fact did the Khmers assimilate the Indian universe that for them Śiva or Viṣṇu were Khmer gods, Mount Meru was in Cambodia, the *Rāmāyana* a national epic. Even if amongst the refined upper strata Indian models were still a kind of ideal, sometime, a nostalgic one (as, for instance, Greece is the "second mother-country" for every cultured Westerner), there is no possible doubt that this was not incompatible with the feeling that they were taking part in a purely national culture. And, for the people, Indian origins were certainly not even surmised. This is not the sole instance of such a process of total assimilation: nowadays, we can still watch it at work, for instance in the case of Buddhism, which has become more and more "national" in the various countries of Southeast Asia, to the point where a nation creates the fiction

of travels of the Buddha or recreates a complete Buddhist "geography" in its own country.

On the other hand, there are many facts which lead to the conclusion that the Khmers probably chose from the prodigious wealth of Indian culture only those traits which fitted in with their own beliefs and aspirations, which were more expressive and therefore more efficient, and only techniques which were adaptable to their environment. For instance, neither the Khmer house on stilts, nor Khmer food—which makes no use of milk—were abandoned in favour of the Indian house or diet. If this was the case, it is all the more natural that what they chose to adopt they assimilated to the point of complete identification. Anyhow, they moved forward, and in course of time modified originally Indian data. Finally all that was left of Indian prototypes were external forms or expressions. The content was quite new, and that, strictly speaking, was Khmer civilization. Although he wrote in Latin, Descartes did not think like a Roman. This is particularly obvious in the case of Khmer art, undoubtedly of Indian origin, but which, as soon as it appears, is already unmistakably indigenous. Ultimately, with the same elements a new plastic style was evolved, and this again (a point which has not been sufficiently stressed) because it was the expression of a new social and conceptual order. Finally, Khmer art gave birth to structures which are unique, and without any point of reference in India.

In other words, it is rather pointless, if not misleading, to speak of Indian "colonies," even of Indian "culture" in Cambodia during the classical period. We must not underrate the Indian contribution, which was not only formidable, but obviously essential at the start. But historians cannot ascribe their own formulas, even when they are scientifically certain, to the Khmers of the time who, however legitimately, probably did not think of their own life as "Indian." This would be as erroneous as calling the Carolingian civilization and the beginning of medieval Christianity "Roman," because Caesar conquered Gaul and

paved the way for centuries of Roman political and cultural domination. No doubt under Charlemagne laws and administration were Roman; art was the heir of Roman architecture; Christianity derived many plastic forms or iconographic themes from Roman and Byzantine art, and even dogmatic concepts from Greek and Roman philosophies. Nonetheless, everyone knows of the originality and personality of this period. After a similar process of assimilation, spread over exactly the same period of duration (Angkor was chosen as capital in 802, two years after the coronation of Charlemagne as Roman Emperor), Khmer civilization was off on its own; the process was due to indianization, but it also represented a liberation from it.

On the other hand, we would like to point out that the general view on this Angkor civilization (and not only of its exact content of Indian traits) contains only a part of the truth, for it is only an "official" one, based on the sources already tapped. We are personally convinced that, subject to this limitation, it is substantially correct. But this does not mean that even at the level of the King and the indianized elite, it was felt to be the only interpretation, and much less so for the whole of the Cambodian people. On the contrary, it seems that modern authors have perhaps too often considered Khmer society as a kind of monolithic pyramid where everything flowed from the top downwards, and only in this direction. We now realize that a society has several levels of thought and activities, concomitant but not always harmonic or even interrelated. Moreover, we know that the religion or the cosmology of a culture cannot be explained without reference to its economy, its social structure, and the whole of its technology. In fact, art itself is but the expression of this entire complex. In the usual picture of the Khmer empire these problems are completely and regrettably ignored; hence the originality of the civilization is wrongly assessed; or the problems are lightly dismissed, and there are vague allusions to the king, head of everything, ruling over an shapeless mass of slave-like subjects. Even if this were the case, detailed proof would be necessary, for we would have a more-or-less

unique situation in history. One should explain how such an abnormal society evolved out of the indianization of the Môn-Khmer aboriginal groups, and how, moreover, it could have subsisted for centuries without any noticeable tensions (for, paradoxically, Khmer history bears no trace of social revolution or trouble), labouring with such obvious willingness for the sole glory of the King. Furthermore, one should explain at least why these gigantic temples of Angkor were built in what was not very fertile country, indeed in the worst part of an area that was not very fertile.

In other words, a complete re-appraisal of our knowledge of classical Cambodia seems quite necessary. And we should like to point out, in this perspective, some possible further approaches to the problem.

We have already pointed out that archaeology, especially the latest methods of field archaeology, offers obviously the best hope for a solution. There are, of course, other possibilities. For instance, Khmer inscriptions can be interpreted from an economic, a sociological or a legal point of view.²⁷ Or else, a study of the reliefs, already ably undertaken,²⁸ could be made to yield much more. But, as we were personally fortunate enough to work in this field, we thought it better to devote ourselves to archaeological research. We concentrated on this from 1951 to 1954, and again from 1957 to 1958, with the generous help of the *Ecole française d'Extrême-Orient*.

We cannot give here even a brief summary of this research, which is still going on. But we can at least underline some methods and their results which seem to give the greatest promise. These were exhaustive excavations of dwelling sites and systematic air-soil surveys.

27. For example: G. Coedès: *La Stèle de Tuol Romlon Tim*. *Journal Asiatique*, 1954, vol. CCXLII, fasc. 1, p. 49.

28. George Groslier: *Recherches sur les Cambogiens*. Paris, 1921.

Proper excavations had not been undertaken before in Cambodia. One reason was that there were already some 800 monuments still in existence all over the country and it was first necessary to inventory, study and date them. As everyone knows, this had been done with some success by the scholars of the *Ecole française* and of the Musée Guimet. Then the *Ecole française* was also put in charge of these ruins, and it was for years given the tremendous task of preserving them from further destruction, and, when possible, of reconstructing them entirely. But, as soon as we were able to devote ourselves to pure research, we planned to excavate some dwelling sites. For various reasons, when the choice was made in 1952, we were limited to the Angkor area itself, where we could not find anything but an urban site. We finally chose the royal palace of Angkor Thom, where the prospects were rather bright to judge from previous chance finds and the general history of the area. A first long-run excavation was carried out there from October 1952 to May 1953.²⁹ However significant the first results, we did not feel entitled to publish them, for too many facts remained in doubt. Unfortunately, events prevented us from resuming work during the following years, and we had to wait until 1957 before we could go back to Angkor. A second campaign was completed then, and we hope to publish the whole of our findings as soon as possible.

We cannot give here even a brief account of this research. Suffice it to say that we excavated four levels, each one having been the site of a royal palace, from the IXth century to the end of the XIVth. The erection, as well as the destruction, of these various palaces during the different sacks of Angkor throw new light on the history of this period. At three levels, we discovered important remains of wooden constructions, with their laterite foundations, water and refuse disposal systems, wooden posts, etc. For the first time we have evidence

29. B.P. Groslier : *Excavations at the Royal palace of Angkor Thom. Preliminary report. Proc. of the XXII^d Congress of Orientalists, Cambridge, 1954.* London, R.A.S., 1957, p. 228.

about Angkor habitations, hitherto known only from the representations in reliefs. Amongst the ruins of these looted palaces, we discovered quite a wealth of material, especially beautiful bronzes such as shafts-finials or cult-statuettes, which now rank amongst the finest productions of the last period of Khmer art. At one level, we unearthed foundation deposits, consisting of bronze-plated jars, containing semi-precious stones, jewels, gold ingots, and silver foil. The excavation of the domestic quarters and kitchen of one palace furnished us with a vast amount of kitchen waste (bones, etc.), important evidence as to the food of the period as well as to its fauna. Analyses and physical studies of all the artifacts have been undertaken, in order to prepare the study of Khmer technology. Generally speaking, all possible efforts were made to gather evidence on these aspects, hitherto entirely neglected or unknown, of Khmer life.

One of the most significant discoveries was the enormous bulk of ceramics. Part of it was Khmer, and it was completely unknown till then. We were able to draft a first tentative chronology of this material, which was of the greatest help for our next research, as will be seen later. But the largest quantity consisted of Chinese export ware. There is very little known about this item for it was made for export only and is not found in China itself, where its kiln-sites have not been studied, not even all located. However, these items are found all over Asia, from the Philippines to Borneo, from Annam to Thailand, in Indonesia as well as on the western coast of Africa, in the whole Middle East, and as far west as Morocco. Everywhere they are the same. They all came from China and they are unmistakable, constantly changing in the course of time, because they were frequently renewed. Here is a chronological clue of exceptional value, for it serves to date entirely different sites over a very wide area. The other data of Angkor excavations were sufficient to establish a chronology of this material between the IXth and the XIVth centuries, with an accuracy of within about half a century. This may seem perhaps too loose, but one must realize that previously the range was about two

centuries. We can, therefore use these data to follow Chinese trade and commercial relations in Southeast Asia, in the same way that we use Greek and Roman ceramics for comparative archaeology of the Mediterranean Basin or intercourse between Rome and India. Besides, we found ceramics imported from both Siam and Annam, and the context of these finds will throw new light on their dates and the relations between these countries and Cambodia, especially for the problem of Savank'alôk ceramics.

But the most important result of these excavations, for us, was the first attempt to identify food-plants of the past from their pollens preserved in the soils. We were able to send our samples to the excellent Laboratory for Palinology of Mrs. Van Campo, in the National Natural History Museum in Paris, and she devoted herself wholeheartedly to this work. The results of her research are of special interest because they confirmed our stratigraphy, and entirely corroborated and explained our general theory of "space-exploitation" during the Angkor period. We would like to give a first glimpse of these data, which have since been multiplied ten-fold and extended to the whole of the Angkor area. To simplify our explanations, we shall sum them up in the following table:

%	WILD SPECIES			CULTIVATED SPECIES	
	Forest trees	Ferns	Gramina-ceae	Rice	Palm-trees Cocoanuts
Virgin soil	66	34	0	0	0
1st occupation level	57	6	24	11	2
2nd occupation level	64	5	16	12	3
3rd occupation level	45	35	20	0	0
Abandon level	43	57	0	0	0

Without dealing with all the problems involved,³⁰ we must stress only the most significant facts:

The soil, which was supposed to be virgin from the evidence of the excavations, and before we could even know if pollens were to be found there, is indeed such, as it does not contain one cultivated species. Furthermore, the statistical and specific distribution of the species found entirely confirms the fact—which we surmised from other research—that, before human occupation, the Angkor country side was mostly swamp-land with flooded forests.

The first occupation level, with buildings, etc., is indeed such as shown by the very noticeable diminution of wild species—especially ferns, and swamp plants—and the appearance of cultivated species, amongst which are rice (*oryza sativa*, that is to say rice from permanent wet rice fields) and fruit trees. The second occupation level offers practically the same spectrum of soil cultivation.

For the third level, we concluded, from other evidence, that at this time (Angkor Wat period, first half of the XIIth century) the Royal palace of Angkor's kings was established elsewhere, and this site momentarily abandoned. This is magnificently confirmed by the disappearance of all cultivated species and the expansion of the ferns and graminaceae; however, the forest itself did not have sufficient time to reappear.

Finally, the abandon level expresses perfectly, both in distribution and composition, the actual forest which buried Angkor after the XVth century.

It must be emphasized again that these results from pollen-analysis were obtained more than one year after the completion of all the other research and we had already drawn our conclusions.

30. In fact, many pollens have not been properly identified yet. For instance, several graminaceae could have been used by man. But the general conclusions of these analyses would not be substantially modified by further detailed studies, as it will be soon apparent.

They are a proof of the soundness of the excavations. But, most of all, they open up new vistas for our research. We can now begin to extend them to the whole of the Angkor area. We hope, finally, to establish maps of the ancient vegetation, period by period and area by area, on which it will probably be possible to follow the action of man upon nature, with the expansion of his cities and the progress—or the failures—of his techniques.

These excavations were necessarily limited to a small area; and because we were obliged to choose the site of the Royal Palaces, our results can not be uncritically extended to the whole of Khmer life; they express only a very special aspect of it. We feel that the main problem is the general setting of the Khmer society in its environment.

Everyone knows that agriculture was certainly the most important factor in Khmer life. This had been rightly supposed by Victor Goloubew.³¹ But it is rather surprising to see that so little has been done on this obviously vital subject, the more so since the proper technique for investigating the matter, air archaeology, had been used in successful experiments in Cambodia.³² But there again, and despite the first move, more than promising, the matter stood, while brilliant achievements were being obtained elsewhere by such archaeologists as O.G.S. Crawford, the Rev. F. Poidebard, or Colonel

31. V. Goloubew : *L'Hydraulique urbaine et agricole à l'époque des rois d'Angkor*. *Bul. économique de l'Indochine*, 1941, fasc. 1, p. 1; ID.: *id.*, in *Cahiers de l'EFEO*, 1940, n° 24, p. 16; see also: R.B. *Le Baray occidental*. *BSE*, nlle sie, 2° trim. 1949, t. 24, n° 2, p. 27.

32. V. Goloubew: *Le Phnom Bakheñ et la ville de Yaçovarman*. *BEFEO*, 1933, vol. 33, fasc. 1, p. 319; ID.: *Nouvelles Recherches autour du Phnom Bakheñ*. *Ibid.*, 1934, vol. 34, fasc. 2, p. 576; ID.: *Recherches aériennes au Cambodge*. *ibid.*, 1936, vol. 36, fasc. 2, p. 465. Later on, a vertical photographic cover of Angkor was made by the Air Force, and partially interpreted by H. Parmentier,

Baradez.³³ Worst of all, the problem of space-exploitation in ancient Cambodia has either been given no consideration or dismissed with a mere passing reference to the altogether ancient and insufficient essay of Goloubew.

When we were in Indochina during 1951 we had at our command the tremendous progress accomplished in the matter of air survey, together with the knowledge of the superb discoveries made from the air in archaeology, and we made every attempt to apply these methods in Cambodia. Southern Indochina is a paradise for archaeology from the air. It is easy to spot the ancient field grid, the irrigation works, and so forth. These works are relatively recent, and they have seldom been erased by more recent human activities. Or, if man is still living in the same area, he is often re-using the old arrangements. The forest is not often a handicap, and very few other natural phenomena have altered the face of the earth.

We were fortunate also in enlisting the full support of the French Air Force, the help of many private pilots, and in having sufficient funds to fly whenever necessary in chartered planes. From 1951 to 1954, we made a systematic air survey of Cambodia and South Viet-Nam, from the latitude of Angkor to Cape Ca-man, with vertical photographic coverage of every suspected site, and complementary oblique black-and-white and colour photographs of all important remains. It is, probably, the most extensive and complete survey of this type in archaeological research that has ever been made and it is certainly one of the most important achievements of the *Ecole française d'Extrême-Orient* during the past decade.

The wealth of data thus acquired is rather impressive. Over six hundred sites have been surveyed, three-quarters of them

33. However, General (then Major) M. Terrasson, who piloted V. Goloubew, fully foreshadowed the importance of this technique in Indochina. Mr. J.Y. Claëys of the *Ecole française d'Extrême-Orient*, carried out some air surveys in Vietnam-Champa. Mr. P. Paris, and after him, Mr. L. Malleret, used air photographs to spot ancient canals in the Fou-nan area. See: B.P. Groslier: *L'Avion et l'Archéologie indochinoise. Forces aériennes françaises*; avril 1952, n° 67, p. 51.

hitherto unknown, connected by several hundred of canals or roads, not to mention the ancient rice fields and the tanks, which amount to several thousands. Of course, we shall need some years of study before we can interpret the whole of these discoveries, and, quite obviously, this prospecting must now be controlled on the ground. For, however accurate air surveying may be, precise identification and dating are made possible only by taking soundings, and eventually carrying out systematic digging, or, at least, proper studies on the spot.

We believed that the Angkor area was suitable for checking the air discoveries because we could work peacefully there, we had the necessary equipment, and we knew the Angkor period best. Moreover, we wanted to study the problem of the transition from pre-Angkor civilization to Angkor structures. This was not, for us, merely the multiplication by an ever-increasing coefficient of the same society, but a complete revolution.

However, we could not get back to Angkor before 1957, and we had first to study our aerial documents entirely *in vitro*. Happily, these documents were of exceptional quality. We had two vertical detailed coverages on the scale of 1/10,000th, a general one on the scale 1/24,000th, plus many vertical or oblique photographs for each important spot. With these data, and the known facts about this problem, we built up a preliminary interpretation of the space organization at Angkor, and formulated some working hypotheses on its possible implication for the evolution of Khmer society.³⁴ This was only a preliminary work, of course, and no one was more aware than we of how hypothetical some of the findings were.

Mapping from the air is now used everywhere exclusively, except for geodesy and toponymy, even for large-scale maps. No one can question the accuracy of the maps produced in this manner by the various geographical surveys in the world. The accuracy

34. B.P. Groslier *Angkor, Hommes et Pierres . . . op. cit.*; ID.: *Angkor et le Combodge au XVI^e siècle d'après les documents portugais et espagnols*. Paris, 1958.

is exactly the same for archaeology, the only handicap being that one must map everything, without being able always to date or to identify exactly. We can offer some proofs of this accuracy.

We were able to reconstruct the hydraulic system of Angkor Thom, both with our air survey and from the previous research of the late Georges Trouvé. A short while afterwards, the discovery of some unpublished Portuguese documents of the XVIth century brought to light a description of Angkor by a traveller of that time, who saw this hydraulic network while it was still functioning. Practically every term of our restitution from the air proved to be exact, although it had been done before anyone even suspected the existence of this corroboration.³⁵ Since then, we have been able to check on the ground some details that remained dubious, and again this proved satisfactory. The same could be said of the whole of the hydraulic network of Angkor, worked out in its main lines from the air in 1952-1954, published in 1956,³⁶ and finally checked on the ground in 1957-1959.

For in 1957 we were able again with the help of the Ecole française, to come back to Angkor in order to check our hypotheses. The task, however, soon appeared to be of such a magnitude that we have not been able yet to complete more than half of it. But even so, for practically every point established from the air, the check on the ground has been a success. Indeed, at the end of the first campaign (1957-1958), we mapped so many sites on the ground that it has not yet been possible to excavate one of them. One must bear in mind that, at the time, absolutely nothing was visible on the ground because all these sites had been entirely destroyed and covered up (which was the reason why, by the way, they had escaped attention till now and could only have been discovered from the air). However, from the air, we have established a repertory of the typical shapes, an "aerial landscape" interpretation, and, together with

35. B.P. Groslier : *Angkor et le Cambodge, op. cit.*

36. B.P. Groslier : *Angkor, Hommes et Pierres, op. cit.* pl. 28-29.

the already known historical facts, we have made suppositions as to the nature and even the possible dates of these remains. We then sent a preliminary report enlisting these hypotheses, to the French Academy (May 1958).

During the second campaign (1958-1959), we dug in the most important remains amongst these sites. In every case but three, the identifications, and eventually the dates proposed were entirely confirmed by the discovery of inscriptions, architectural remains or archaeological material. For instance, we had tentatively defined one site, spotted from the air, as a temple of the middle of the Xth century. We found its foundations, with inscriptions from the beginning of the reign of Rājendravarman (944-968). Elsewhere, architectural remains, or statues, or ceramics, helped to establish the nature and the date, and furnished the same cross-check. As for the three cases of error, they were omissions rather than real errors. We had supposed that two places were dwelling sites of the middle of the IXth century, and soundings produced domestic ceramics of this period. But they had also, later on, become pagoda sites, and we discovered on one of them interesting Buddhist sculptures of about the XVIIth-XVIIIth centuries. As for the other place, we supposed that it was a dwelling site of the Xth century, and we found material of this period. But, because the soundings were carried down to the virgin soil, we discovered there several layers of prehistoric remains, "neolithic," if one wishes to be more precise, although it must be admitted our knowledge of prehistoric Cambodia is less than perfect. This is the first prehistoric site discovered in the Angkor area proper, and it may prove of some consequence in the history of this region.

With our method now thoroughly proved by these finds, we were able to undertake the exhaustive study of Angkor space-organization. We began, logically, with the sector of Hariharālaya, the first great capital (between 800 and 900). We wanted to follow the evolution from the pre-Angkor city of Jayavarman II (c. 802-850) to the Angkor capital of

Indravarman (c. 877-899). We discovered, and mapped, the whole of the hydraulic system and the type of soil-exploitation with sufficient accuracy as to the levelling, in order to restore the circulation of water in ancient times. Besides, we discovered twenty-five new temples, and excavated seventeen of them. Several of these, although almost entirely destroyed, still offer important vestiges, and we unearthed many sculptures. Also some thirty-seven dwelling sites were spotted; almost all of them were tested with sounding trenches, and then dated with the help of the ceramic chronology established during our excavations at the royal palace. For the first time we found, side by side with the great royal or sacerdotal foundations, the villages and the small temples of the humble Khmer peasantry.

In a second phase, we extended these researches to the southern part of the Angkor area. It was again possible to trace the irrigation system, together with the levelling and the general circulation of the waters. Altogether about one hundred and fifty new sites were again discovered, and several are already dated by the statues or architectural remains which appeared after a first clearing. In other words, a complete revision of our knowledge of Angkor is taking shape.³⁷

Of course, we shall need years of further studies before we can integrate all these new facts with our general picture of the Khmer past. But already it is possible to underline some essential consequences of this new approach.

On the one hand, this methodic prospecting by air- and soil-surveys has given sufficient proof, if these were still necessary, of its exceptional efficacy. In the very area which was considered and was in fact the best known in all Southeast Asia, more than two hundred new sites have been discovered, not to mention the whole of the hydraulic system and the rice-field pattern. It is now certain that one cannot, in this type of country,

37. Communication of Nov. 13th, 1959, to the French Academie des Inscriptions et Belles-Lettres, Paris; to be published in the proceedings of the Academy.

proceed otherwise. And because the technique of "aerial-landscape" proved so effective, we could perhaps follow the same pattern for the tremendous task of exploring the rest of Indochina. First we will conduct an air-survey, with a proper interpretation of the facts discovered, and the systematic confrontation of them with other data. Then we will verify on the ground every important unusual prototype of aerial landscape. Thus, it will be possible to establish more-or-less complete maps, sufficiently expressive for a first general and tentative reconstruction of the past. Later on, if we can, we shall explore methodically every spot. This must be our ultimate goal; but we will require a number of teams, substantial funds, and the peace which is so necessary in order to carry out the work.

On the other hand, this type of prospecting is the only one which can bring forth, if not all the facts, at least the greater part of them. There is no other way of ascertaining the facts, for instance, of space-organization works such as canals, dikes, road and field patterns, as well as dwelling sites and smaller temple remains. With these, we are in a position to build up a new interpretation of Khmer civilization. We can now put proper stress on the agricultural factor in Khmer life, and try to explain how Khmer society achieved such a strong degree of concentration and productive capacity. In the same way, its creative works, its art, and the mountain temple itself are placed in their proper perspective as expressions of the whole complex. We have outlined some of these views elsewhere, and we should not dwell upon them again.³⁸ But, whatever is finally proved to be true, it is already possible, at least, to say that this new approach must be followed if one is to understand all the facts. If it is properly carried out, we will probably have a better appreciation of the Khmer civilization, its origins, its formation, and its evolution. We should then be able to define the separation between Indian heritage and local creation.

38. B.P. Groslier : *Angkor et le Cambodge, op. cit.*

On one point we can offer a sample demonstration of the results. We have already underlined the problem of transition from pre-Angkor to Angkor society. Our study of Hariharālaya affords the necessary evidence. Before Indravarman, a Khmer city was only a small urban nucleus of temples, palaces and habitations of the elite. Around it inhabitants farmed the soil in an empirical way, or rather cultivated it only according to the rhythm of natural factors, depending upon actual levelling' rains or periodic floods to fill rice fields. Pre-Angkor Cambodia was but the juxtaposition of small groups in geographical units, living in accordance with the natural capacity of these units. In complete contrast with this "natural" structure, Angkorean Cambodia appears as a systematic and artificial organization of the whole available space, favourable or not, made cultivable by a huge hydraulic network, and farmed to the limit of its capacity. This, and only this, explains the nature of the Angkorean "city," which is in fact the system evolved for intensive exploitation. And only this, again, can justify the social concentration of the period. We have here, therefore, one of the most important factors of Khmer evolution, and we shall have to adjust all the other conclusions of history to include the data of the economy and sociology of ancient Cambodia, if we are to effect a final synthesis.

One can perhaps now understand better our position in the field of Cambodian studies, or, for that matter, of Indochinese studies. Already archaeology has furnished the bulk of our knowledge of these countries. Meanwhile, epigraphy and Indian studies have explained the formation of these civilizations, and supplied their essential chronology and general evolution. Unfortunately, epigraphy has practically reached its limits, and we have not much hope of finding many more texts; they will in any event always provide the same type of data. This is also true for the history of art, which has been an invaluable help, but which is nearing the end of its capacity.

The recent progress of archaeology in the field, together with the general study of man's biological environment, has enabled us to apprehend the technological and economical behaviour of man in his natural setting. The impact of these discoveries on the general evolution of a culture is more than obvious. We must therefore concentrate our efforts, within this perspective, jointly with ethnologists, who may help us tremendously in our task.³⁹

In order to be more accurate in our Cambodian research, we should underline two main prospects for further studies. On the one hand, we must ponder again the general phenomenon of Indian cultural diffusion. Already, as a matter of fact, new vistas are opening up. What we need most, perhaps, are unbiased minds for the proper sorting out of the facts and for a determination of their real action or significance. On the other hand, we must develop our archaeological research for the purpose of elucidating this question of Indian action by an exact appreciation of pre-Indian cultures and of the Indian cultural process. We must also use this research to bring out in the general history of Cambodia, and in that of other countries, the part played by economics and social patterns. It may be said, at least for Cambodia, that the prospects of archaeological research are bright in these respects.

We must, finally, stress how much we owe to our masters, the founders of the history of this part of the world. Without the magnificent achievements of the epigraphists, the historians and the art critics, however efficient the new methods, we could not have progressed any further in this quest for the past.

39. B.P. Groslier : *Histoire et Ethnologie en Indochine*. BSEI, nlle sie, t. 27, n° 3, 3^e trim. 1952, p. 333.