

By CLAUDE LÉVI-STRAUSS

## PANORAMA OF ETHNOLOGY 1950-1952

A panorama of ethnological studies during the last two or three years must cover considerations as apparently remote as the margin of error in estimating the age of radio-active elements on the one hand and, on the other, the question of whether ethnology originates from the sciences of Man or the sciences of Nature. This widening of the scope of ethnological studies is matched by the widening of public interest in ethnological problems, or, to put it more precisely, in problems presented in the terms and by the aid of ethnological formulae. It should be noted, moreover, that also the traditional domain of ethnology is in a process of expansion, stretching from the study of the so-called savage or primitive social forms, without hesitating any longer, to the field of modern society and its most complex activities.

Thirty years ago Kroeber opened this route by tackling the problem of the feminine fashion from the ethnological point of view. Today ethnology travels in many directions. It studies manners and penetrates into the phenomena of the film industry. Not even the antagonism between East and West is out of its reach.

In fact, by a demand as pressing in its requirements as it is vague in its aims, ethnology appears to be on the road to the formulation of a new humanism. Perhaps, the rediscovery of ancient culture during the Renaissance—with the collaboration of the Arabs—was itself already an ethnological enterprise, though conceived on a limited basis.

While the modern movement is more ambitious in its scope, it is not essentially different in its methods. Ethnology always concerns itself with the understanding of man through a comparative study of a vast number of human experiences.

The search for such experiences, however, is no longer confined to the fields of exploit of exceptional spirits—poets, orators, or philosophers—but takes in the humble labours of those anonymous groupings called societies. It has become ever clearer that there can be no reliance upon the experiences of an ‘elite’ (chosen, in any case, by some subjective criterion) and that no conclusion has any validity even with regard to a selected few unless it be inspired by the experience of all. Never has an ambition so high been so consciously formulated by a single discipline. For ethnology is nothing less than an effort to explain the complete man by means of studying the whole social experience of man.

Faced with such a task, the ethnologist might have felt discouraged. But while measuring the size of his endeavour he became aware of the possibility of greatly simplifying his method. Thus the essential could be seized from the great mass of evidence.

Research projects as different from one another as the elaboration of the Human Relation Files of Yale University, the studies looking toward a firmer grounding for the notions of ‘basic personality’ or ‘national character’, the structural analyses, all have a definite relationship. For although they use different means and sometimes even are guided by incompatible theories, they share the same preoccupation: their aim is to isolate, from the mass of customs, creeds, and institutions, a precipitate which often is infinitesimal but contains in itself the very meaning of man.

Aware of its special mission, ethnology retains the hybrid character owed to its historical origin. It has taken pell-mell to its breast many observations which none of the traditional sciences were disposed to welcome. This reluctance may have been due to the oddity of customs or to the low level of existence among the populations in question, which placed them outside the available systems of reference. In other cases that reluctance may have been based on a more banal reason, viz., the absence of graven images upon monuments or of writing, which disarmed the

enterprises of the archaeologist and the historian. Finally—as is the case in pre-Columbian America—it takes Rosetta stones to produce Champollions.

Rag-picker of the humanities from the beginning, anthropology believes that it has now found the master keys to the human mystery among the debris round the doors of the other disciplines. Even while preparing to try them, slowly and prudently, in the locks, it pursues its humble duty of straightening and sorting the residue which continues to accumulate.

If the historians and the archaeologists have abandoned immense periods of history to the anthropological sciences, it is because the dates are so very uncertain. In the case of the Lower Paleolithic period, for instance, there are margins of error amounting to as much as 300,000 years. Anthropology has shown its ingenuity in applying itself to quite different disciplines and borrowing from them the means of reducing such uncertainties.

Thus, pollen analysis or palyonology as it is called today, and the study of tree rings, or dendrochronology, appeal simultaneously to geology, botany, meteorology, astronomy, and archaeology. Yet, whatever the progress achieved through such methods, they remain subject to contradictory limitations. Palynology goes back to ancient times but it gives only relative dates. In other words, it is a system suitable only for the establishment of correlations within archaeological phases which are themselves uncertain. Inversely, dendrochronology gives absolute dates but can hardly take the investigator back more than 2,000 years.

The discovery by W. F. Libby of a method of dating archaeological remains of animal or vegetable origin by the measurement of radio-activity in Carbon 14 thus has upset not only the anthropological perspectives but probably, even in the very short run, the bases themselves of the division of work among the various sciences of man.<sup>1</sup>

The method is based on the hypothesis that radio-active carbon forms spontaneously in the highest atmospheric layers through the effect of cosmic rays and the rate of formation remains constant throughout history. The proportion of radio-active carbon in inert carbon is likewise assumed to remain constant everywhere.

When human intervention transforms organic matter (wood, fibre, bone, etc.) into a manufactured object or into debris, this matter ceases to maintain its radio-active equilibrium with the environment. If the residual

<sup>1</sup>cf. *Radiocarbon Dating*. Assembled by F. Johnston. *American Antiquity*, xvii, 1, 2, 1951.

radio-activity is measured, it will be seen when the matter was handled by man.

A discussion of the technical problems of an extremely delicate nature which had to be resolved cannot be undertaken here. It may suffice to enumerate the most important results, although their validity, for the time being, is to be taken as provisional.

Initial tests on objects dated by other means have been remarkably exact. Apart from a doubtful date on the tomb of Zoser (which cannot be so recent), all the Egyptian time periods indicated by the radio-carbon method coincide approximately with the long-established chronologies. It has been all but impossible, till now, to work on the neolithic and proto-historic civilisations of the Orient on account of the reluctance of museum curators to permit the destruction of rare objects (or parts thereof) in their keeping. For the new system requires carbonisation of specimens beforehand. The few measures which could be taken tend toward the same conclusion: that the Neolithic revolution, with the birth of agriculture and the domestication of animals, was followed much more rapidly than had been supposed by the rise of the Great States. The intervening period could hardly have been more than two thousand years as against the three or four thousand years which had been assumed till now. In Egypt, e.g., the Fayoum A had been ascribed an absolute age of 6,095 years, plus or minus 250 years. Now the date may be set as not more than a thousand years before the founding of the First Dynasty (3100 B.C.).

A similar condensation of chronology seems to result from the only measurement published so far on the Western prehistoric period, viz., that of the charcoal found in the Cave of Lascaux, which would belong in the thirteenth millennium B.C. (It is difficult to say, however, whether the fireplaces from which they were extracted are of the same period as the frescoes.)

In the field of American history and archaeology the new method has yielded the richest results. The reason is twofold. First of all, the fact that the method was elaborated in the United States, at the Institute of Nuclear Studies of the University of Chicago, has attracted local resources and the curiosity of American scholars. Second, estimations of American archaeological material had been conjectural and it had become particularly pressing to give this vast domain a beginning of stability.

Generally, the results of this research suggest conclusions symmetrical with, but opposite to, those obtained in the Old World. In other words, the American dates are between 500 and 1,500 years older than had been

supposed. The very archaic levels without ceramics, and with an agriculture without corn, recently discovered in Peru in the valley of Viru and at Huaca Prieta, might be about 4,000 years old. Remains in the United States, on the other hand, such as Bat Cave, where primitive forms of corn and archaic cochise have been found, may go back as far as 6,000 years. Tlatilco, in Mexico, may have an age of 6,390 years, plus or minus 300.

The dawn of the historical cultures of South America may be dated as follows: Mochica, from the fourth century B.C. to the second century A.D.; Paracas, third or fourth century B.C.; and Nazca, first or second century B.C. Principal estimates for Mexico are: Tehotihuacan and the first Monte Alban, between the start of the first millennium and the fifth century B.C.; Monte Alban II, first to second century B.C.; Tehotihuacan III and Monte Alban III, about the fourth century A.D.

Still greater surprises were in store for the archaeologists of the United States when, all at once, the dates of the important prehistoric cultures of Adena and Hopewell had to be reversed in their relative position, moved up in their absolute position, and spread over a longer period of evolution than had been supposed.

Since, however, these conclusions often contradict other estimates, they are not accepted universally. At any rate, these observations indicate that the start of civilisation in America and, in particular, the diffusion of cultivated species go back at least a thousand years farther than had been supposed. As the Neolithic period of the Old World has been given new youth at the same time that the New World has been endowed with additional antiquity, relationships between the two may have to be regarded in a new light.

Whatever the importance of the results and of the perfections which are rightfully expected, two limitations of the radio-carbon method cannot be ignored. As the period, or half-life, of the isotope is 5,600 years, measurements by the methods at our disposal today can go back only about 25,000 years. Until other substances reaching farther into the past are found, such prehistoric epochs as the Middle and Lower Palæolithic must remain out of bounds.

Secondly, the method is based on the measurement of a statistical phenomenon, viz., the rhythm of disintegration of radio-active atoms. The duration of the measurement period is now 48 hours. Augmenting this period would result in an ever closer approximation to the exact values, but it would mean fewer reports from the limited number of present-day laboratories. And the result will be, in any case, a probability

(although increasingly high) for a date placed between two limits (which will approach each other ever closer as the method is perfected).

In 1949 H. de Terra published his final conclusions in regard to the Man of Tepexcan,<sup>2</sup> which the carbon method indirectly (by measurements of the nearby radio-active turf) dates back some twelve thousand years. While certain persons hesitate to accept this estimate, it has just received a sensational confirmation from the as yet unpublished discovery of a mammoth skeleton in the same region of central Mexico. Among the bones were found six worked stone tools, which apparently had been abandoned by men in the process of skinning the beast; for certain parts of it had already been stripped.

Recent discoveries in regard to the chronology of Mexican civilisations were announced by Paul Kirchhoff at the 27th International Congress of Americanists in New York in 1947. The first volume of the Proceedings had just been published by the University of Chicago Press under the title *The Civilizations of Ancient America*. According to Kirchhoff, the older authors had concocted a synthetic chronology by piecing together local chronologies. It would be sufficient to disentangle this confusion in order to recover the distinct chronologies. These correspond with a precision permitting the announcement of the pre-Columbian societies' arrival as a part of history proper. By this method the dates of the foundation of Tenochtitlan and Tlatelolco would be set as 1369-1370.

Another important contribution in the same direction has been made by Eric Thompson. In his recent work<sup>3</sup> he undertakes a critical revision of all existing documents dealing with the deciphering of Maya writing. He brings many new insights into the metaphysical and cosmological ideas of the ancient Maya and elucidates the meaning of many hieroglyphs, thus encouraging the hope that the Mexican writings can finally be made legible fairly soon.

In fact, all our conceptions about the proto-history of Mexico (and, indirectly, that of all America) show the advance signs of a complete change. For a century the Maya were believed to be the founders of the advanced civilisations of Central America. It becomes clear now that they were, along with the Zapotecs, nothing more than the bearers, however flamboyant, of a culture still little known and arbitrarily called Olmec, which flourished, in the very heart of Mexico, from the archaic period to

<sup>2</sup>New York: Viking Fund, 1949.

<sup>3</sup>*Maya Hieroglyphic Writing: Introduction*. Publ. No. 589. Washington: Carnegie Institution of Washington, 1950.

the beginning of the Christian era and had developed a style unsurpassed in grandeur and refinement. This Olmec tradition put its mark on pottery figurines springing from the most ancient archaeological levels. At the base of that phantasmagoria of dazzling and ephemeral cultures, so characteristic of pre-Columbian America, there must have been, then, another, of which the typical traits persisted over a period of a thousand to fifteen hundred years and which, in the present state of our knowledge, would appear to have been the most perfect although originating from nothing. The problem of the source of the pre-Columbian civilisations thus takes on an unsuspected size.

On the ground of Maya archaeology, which had been supposed to be more solid, another surprise was in store for researchers. Up till now scientists were convinced that the pyramids serving as bases for the Maya temples were only mounds of earth and debris re clothed with an architectural adornment. But recent excavations at Palenque, in the State of Chiapas in southern Mexico, have revealed a zigzag staircase in the centre of the principal pyramid, proceeding from summit to base and leading to a subterranean room, the walls of which are covered with stucco. In the centre of this chamber there is a great carved slab of stone, representing a splendidly dressed personage seated on a throne. Because of the rainy season, which interrupted excavations, this stone cannot be taken out until the spring of 1953. What will be found in the coffer or coffin of stone which it appears to cover cannot be known at present. But it has already been ascertained that personages of high station had been sacrificed in front of the entrance to the chamber before it was walled up. Despite the latter fact, it was possible to send offerings or receive messages or inspiration through a sort of tube, or hollow serpent, penetrating the wall.

Is there something here to suggest, as it already has to some, the Egyptian pyramids and their secret funerary chambers? Yet the enormous divergence in dates and the fundamental differences in architectural principles which seem to have been applied in the two cases cannot be overlooked.

However this may be, a new chapter in American archaeology starts with the discovery at Palenque.

So far as South America is concerned, the discoveries briefly indicated above are commented on and discussed in several publications.<sup>4</sup> The most important point is the discovery of agricultural civilisations without

<sup>4</sup> cf. W. C. Bennett, 'A Reappraisal of Peruvian Archaeology'. *American Antiquity*, XIII, 4, 2, 1948; cf. also W. C. Bennett and J. B. Bird, *Andean Culture and History*. New York, 1949.

pottery and without corn. Studies dealing with the most backward phases of Andean civilisations will receive a vigorous impetus from the publication of the first volume of P. Rivet's and G. de Créqui-Montfort's monumental work.<sup>5</sup>

Aided on one side by nuclear physics, anthropology turns on the other hand towards botany and, more particularly, genetics, to obtain results which it must attempt to put into agreement with the preceding theories. (Perhaps this task will prove not to be very difficult.) Recent articles<sup>6</sup> bring extremely unsettling arguments in favour of the idea of a South Asian origin of the American forms of cotton and of all forms of corn.

Cultivated American cotton of twenty-six chromosomes would have originated from a grafting of cultivated Asiatic cotton of thirteen chromosomes and wild Peruvian cotton, likewise of thirteen chromosomes. Genetic considerations and the chronology given by the radio-carbon method suggest that the Asiatic species must have been introduced into South America even earlier than the first millennium. With regard to corn the situation is even stranger. There is no cultivated plant the American origin of which has been so freely admitted. Yet it seems impossible to discover its place of domestication or the wild species from which it might have been derived.

By another approach, linguistics and archæology suggest a belated introduction of corn in America. The most ancient specimens, very different in form from those of today, go back to about 2500 B.C., and in South America as well as in North America agricultural cultures without corn existed. The presence of primitive forms of corn in the mountainous valleys of South-eastern Asia, unknown in India and China until the re-introduction of American corn in the seventeenth century, could furnish a very seductive solution. Yet it must be admitted that any regular relations between Southern Asia and America at a date which could not be less than the third millenary B.C. raise problems which are nowhere near a solution.

On the other hand, geneticists seem to have solidly established that a goodly number of Hawaiian plants were imported from America at an early period. The reader will not fail to connect these speculations with the Kon-tiki expedition.<sup>7</sup> Although Heyerdahl and his companions certainly

<sup>5</sup>*Bibliographie des Langues Aymara et Kivua*, Vol. 1. Paris: Institut d'Ethnologie, 1951.

<sup>6</sup>cf. G. F. Carter, *Southwestern Journal of Anthropology*, VI, 2, 1950; C. R. Stoner and E. Anderson, *Annals of the Missouri Botanical Garden*, 39, 1949.

<sup>7</sup>T. Heyerdahl, *The American Indians in the Pacific*. Stockholm, 1950.



could not prove their hypothesis of the American origin of Polynesian civilisations, they at least demonstrated, through their prodigious voyage, how intermittent contacts between America and Oceania could have taken place.

To the discoveries of Ipiutak, on the edge of the Behring Straits, which their authors link to the Siberian civilisations of the first millennium B. C.<sup>8</sup> should be added, from the other end of the continent, those of M. Reichlen in the north of Peru.<sup>9</sup> The burial villages which Reichlen describes, cut into the flank of cliffs and garnished with houses and figurines, bring to mind similar usages among the natives of the Celebes. All these facts will undoubtedly contribute toward a reopening of the file, never properly classified, of prehistoric relationships between America and Asia.

Perhaps new discoveries in regard to the archaic civilisations of Asia and the Pacific will aid, in their turn, in filling the gap which still exists between the two worlds. Research in archæology, folk-lore, and ethnography has been resumed in Japan. As for China, we unfortunately know nothing about the work carried on under the new regime. But no one can forget the excitement which greeted the publication of von Koenigswald's discovery of the South Chinese 'giant' at the same time that South African excavations revealed, at levels apparently more ancient than anyone had presumed before, the existence of 'pygmies' who used fire and hunted in bands.

Definitive publication of these latter discoveries is imminent.<sup>10</sup> As for the 'gigantropus', some doubts have more recently come up. Perhaps we are dealing here, after all, with an anthropoid rather than with a hominid.

The whole field of knowledge in human palæontology and prehistory of the Far East is the subject of a careful survey by H. L. Movius, Jr.<sup>11</sup> The essential problem is raised by the presence in the Lower Paleolithic, in two regions as widely separated from each other as Punjab and Java, of biface implements, in contrast to the chip industries found to predominate in all the rest of Asia. On the other hand it seems that the prehistoric period in Asia may be several hundreds of thousands of years later than that of Europe and Africa.

<sup>8</sup> cf. H. Larsen and F. Rainey, 'Ipiutak and the Arctic Whale Hunting Culture', *Anthrop. Papers of the American Museum of Natural History*, 42, 1948.

<sup>9</sup> *Journal of the Society of Americanists*, 39, 1950.

<sup>10</sup> cf. S. Zuckerman in *Nature*, Nos. 165 and 166, 1950.

<sup>11</sup> 'The Lower Paleolithic Cultures of Southern and Eastern Asia', *Transactions of the American Philosophical Society*, 38, 4, 1949.

A new chapter of anthropology is about to open with the debut of an Oceanic archæology. From research in the field, like that of Avias in New Caledonia<sup>12</sup> of Gifford at Fiji,<sup>13</sup> and of others; from the vast compilation of Riesenfeld; and, finally, from the archæological expeditions of the Chicago Museum of Natural History at Saipan and Tinian in Micronesia in 1949–50, a complex chronology is beginning to emerge, and one may hope for a progressive enlightenment in regard to the movement of populations, migrations, and revolutions which concurred with physiography to give these islands their out-of-the-ordinary character. Nothing extremely archaic appears elsewhere in this region of the world where, curiously enough, archæology is called upon, side by side with mythology, legends, and genealogies conserved in the memory of the natives, to make its contribution to determining periods hardly older than three or four centuries.

In what concerns populations still alive, the greatest progress toward knowledge accomplished in the course of the last few years is undoubtedly marked by the publication of the *Handbook of South American Indians*.<sup>14</sup> The sixth volume has just appeared, and only one more, the index, is yet to come. This vast compilation, directed by Professor J. Steward, may be debatable from the point of view of organisation. But it has the immense merit of presenting the work of a group of international scientists who have, nearly all, a direct knowledge of the American native. Even when they sum up ancient knowledge and works, their analyses are enlivened by direct ethnographical experience, and many new observations have found their place in this veritable summa, to which A. Métraux has made the principal contribution.

In South America the awakening of anthropological studies is being assisted by national projects. This movement is particularly marked in Brazil, where the *Revista do Museu Paulista*, directed by Professor J. Baldus, has been publishing for several years a rich collection of studies by a group of young scientists including E. Galvao, F. Fernandez, E. Schaden, D. Ribeiro, and others.

In Colombia, Reichel Dolmatoff has just published the second volume of a work about the Kogi Indians. He describes a society organised in

<sup>12</sup> *Journal de la Société des Océanistes*, vi, 1950.

<sup>13</sup> *Archæological Excavations in Fiji*. Berkeley: University of California Press, 1951.

<sup>14</sup> Bureau of American Ethnology.

clans, with an extraordinarily rich metaphysico-religious system, wherein a good many of the traits which, no doubt, characterised the great Andean civilisations during the pre-Columbian epoch, can be seen alive today.

Thus, where writing is not available or legible, there are the customs which have survived to our day, and the oral traditions, to permit eventually the interpretation of that prodigious array of painted vases and carved monuments whose motifs, accessible in all the museums of the world, still await correct deciphering.

The famous motif of the man-eating jaguar, encountered from Peru to the Antilles, becomes quite clear, as demonstrated in Dolmatoff's commentary, in the context of Kogi concepts of death. The Kogi Indians have, as well, the custom of symbolising all names, sexes, ages, and social and religious status positions by means of the different varieties of pearls in the collars found in the ancient tombs which abound around their villages. They have, thus, elaborated a vast system endowed with the rules the materials of which are the archæological vestiges left by their distant ancestors.

The abundance of North American publications permits only the mention of a few titles. In the tradition of the school of Boas, Gladys Reichard, the last disciple of strict observance, distinguishes herself with her study, *Navajo Religion: A Study of Symbolism*.<sup>15</sup> These two volumes constitute a unique attempt to establish for a native tribe a complete system of correlations among the pantheon, the myths, the rituals, the moral ideals, the classification of sensory perceptions, and art. Even though it could be objected that the author has not seen this task through, it cannot be denied that her work has meaning for the psychologist as well as the linguist, the historian of art as well as the historian of scientific thought.

A structural perspective is taken by Fred Eggan, a student of Radcliffe Brown, in his book *Social Organization of the Western Pueblos*.<sup>16</sup> This work attempts to correlate the systems of kinship among the different Pueblo tribes as well as other aspects of their social organisation. *Mandan Social and Ceremonial Organization*, by A. W. Bowers<sup>17</sup>; *The Northern and Central Nootka Tribes*, by Ph. Drucker<sup>18</sup>; and *Los Otomies*, by P. C. Pizana<sup>19</sup> show

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<sup>15</sup> 'Bollingen Series'. New York: Pantheon, 1950.

<sup>16</sup> Chicago: University of Chicago Press, 1950.

<sup>17</sup> Chicago: University of Chicago Press, 1950.

<sup>18</sup> Bulletin 144, Bureau of American Ethnology, 1951.

<sup>19</sup> Mexico City: Universidad Nacional, 1951.

what a wealth of original information can be gathered by a sane research method about populations which, through their long contact with the whites, have apparently undergone such far-reaching changes.

In the rest of the world new domains are being opened to anthropological research while others, which had been thought exhausted, have been reopened. For about five years the least aryanised populations of India have been the object of profound studies like those of Verrier Elwin,<sup>20</sup> of Christopher von Fürer Haimendorf,<sup>21</sup> or the still unpublished researches of Louis Dumont. These studies suggest that the primitive races and cultures whose prototypes had been sought in the mongol populations of Assam and Burma<sup>22</sup> actually extend much more to the west, as far as the central provinces.

These populations have odd institutions, like the bachelor houses or special asymmetrical forms of preferential marriage. The understanding of these institutions is probably indispensable to the reconstruction of the most archaic types of Indo-European culture.

The studies just mentioned constitute models of ethnographical investigation. It is thanks to them that the problem of the striking analogies between certain South-Asian items and their Scandinavian counterparts, a problem presented till now on a purely archæological ground, promises new developments on the sociological plane. As those ancient institutions seem to have extended toward the East into Japan and into Indonesia, an immense problem is raised, not only in historio-geographic terms, but in regard to structural typology. The inquiries on Indo-China by K. G. Izikowitz<sup>23</sup> and those by M. G. Condominas bring forth new facts on this part of the world.

On the Japanese side, we have drawn attention to the efforts of specialists like Takeda Hisayoshi, Yanagida Kunio, and Naoe Hiroji, to collect a unique folk-lore before it disappears completely. As far as Indonesia is concerned, one should single out the work of A. E. Jensen<sup>24</sup> which contains source material gathered before the war but utilised by the same

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<sup>20</sup> *The Muria and Their Ghotul: Myths of Middle India*. Oxford University Press, 1947, 1949.

<sup>21</sup> *The Raj Gonds of Adilabad*, Vol. 1. London-New York: Macmillan, 1948.

<sup>22</sup> cf. E. R. Leach, 'Jinghpaw Kinship Terminology', *Journal of the Royal Anthropological Institute*, 1950.

<sup>23</sup> *Lamet, Hill Peasants in French Indo-China*. Goteburg, 1951.

<sup>24</sup> *Die Drei Ströme. Züge aus dem geistigen und religiösen Leben der Wemale, einem Primitiv-Volk in den Molukken*. Frankfurt am Main, 1948.

author in a recent theoretical work.<sup>25</sup> We should draw attention, likewise, to the sociological studies of P. E. Josselin de Jong.<sup>26</sup>

The Pacific islands have been the scene of important economic and social transformations. Striking information about this region comes from such authors as Ian Hogbin,<sup>27</sup> who describes what happened to the culture of a village in New Guinea—i.e., in one of the least-known and least-visited parts of the world up to 1939—after the successive Japanese and American occupations and the contact, which these implied, with the most perfected modern means of communication and of destruction. The picture is rather pitiful.

On the other hand, the American Navy, who took charge of the islands of Micronesia, must be credited with the most systematic investigation, on the largest scale, of customs, languages, and institutions that has ever been undertaken among a group of indigenous populations. These investigations were generously supported by the Wenner-Gren Foundation for Anthropological Studies (which, incidentally, sponsored the Carbon 14 studies to which reference was made above).

Micronesia, nearly unknown up till recently from the ethnographic point of view, came into the limelight through a multitude of inquiries and through notes which the natives themselves learned to take.<sup>28</sup>

In Australia, the rigour and penetration of A. P. Elkin's research and teaching and the quality of work published in the review *Oceania* over a period of twenty years by a group of investigators gathered round him have resulted in what might be considered a small ethnographic miracle, had not the ground been so carefully prepared over a long period of time. A young couple of researchers, Mr. and Mrs. Berndt, brought to light an entirely new aspect of those Australian societies which seemed to have lost all interest both on account of the exhausting zeal of previous investigators and the progress of civilisation. In a series of publications, whose prolificity does not detract in any way from the vigour and compactness of the content, this exceptionally endowed couple is in the process of

<sup>25</sup> *Mythos und Kult bei Naturvölkern*. Wiesbaden, 1951.

<sup>26</sup> *Minangkabau and Negri Sembilan Socio-political Structure in Indonesia*. Leyden, 1951.

<sup>27</sup> *Transformation Scene*. London: Routledge and Kegan Paul, 1951.

<sup>28</sup> cf. the writings of H. G. Barnett on Palau, published by the University of Oregon in 1949; of A. Spoehr on the Marshall and Gilbert Isles (Chicago Museum of Natural History, 1949), and of W. H. Goodenough on Truk (Yale University Publications in Anthropology, 46, 1951).

writing, all alone, a quite new chapter in the sociology of that part of the world.<sup>29</sup>

The interest of their publications is as vast as the range of their observations, extending from the complete ritual texts, which they were the first to gather, transcribe, and endow with a critical apparatus, to the primitive paintings they have published. The latter are astonishing compositions representing sexual acts in which human beings appear to be insects; semi-symbolic and semi-realistic illustrations of myths in which every detail, every colour, has a significance.

We are too uninformed about Soviet research to give a detailed analysis of anthropological progress in Siberia and elsewhere. Certain works analyse the impact of the collectivisation of farm lands on the traditional social structure of Central Asian populations. Some curious functional transitions appear between the exogamic clans or sub-clans and the work brigades. A recent article by I. A. Lopatin<sup>30</sup> shows, in the same sense, how the poetic form of the *chastushka* maintains itself in the villages while expressing new preoccupations.

Up to last year the ethnographic-linguistic doctrines of Marr dominated the theoretical interpretations of Russian scientists. It is well known that the vigorous polemic among specialists, whose outcome was determined against Marrism by three ringing interviews of Stalin, has altogether modified this orientation. A summary of texts relative to this affair has been translated and published by Columbia University.<sup>31</sup> According to the present official thesis, language does not stem either from the 'superstructures', as Marr would have it—with the consequence that each phase of linguistic development would be the instrument of the dominant class—nor from the 'substructures', but from a separate category, in which belongs also the technical apparatus of a society. 'For the technical apparatus, just like language, is to some extent indifferent to classes, and both can be put to work by different classes, whether old or new.' The obvious conclusion is that the evolution of both language and technique is governed by its own laws. 'Grammar', said Stalin, 'resembles geometry in that it finds its laws on concepts which are abstracted from the

<sup>29</sup> *Women's Changing Ceremonies in North Australia*. Paris: L'Home, 1950; *Kunapipi, A Study of an Australian Aboriginal Cult*. Melbourne: Cheshire, 1951; *Sexual Behaviour in Western Arnhem Land*. New York, 1951. To these must be added numerous articles and other works actually in the press.

<sup>30</sup> *Journal of American Folklore*, No. 252, 1951.

<sup>31</sup> *The Soviet Linguistic Controversy*. King's Crown Press, 1951.

experience of objects, and it considers objects as bodies without concrete character.' It is too soon to know what influence this doctrinal shift will have on Soviet anthropology.<sup>32</sup>

African studies are now receiving the aid of governments and international institutions, which are awakening to the dangers implicit in the transformation, already violent in several regions, of the traditional structure of indigenous societies. As this structure rests essentially on family ties, the International Institute of African Studies, supported by UNESCO has considered it useful to follow up a previous volume on African political systems with an important work, *African Systems of Kinship and Marriage*.<sup>33</sup> This collection of studies, by different authors, directed by Professors Radcliffe Brown and Daryll Forde and prefaced with a long essay by the former, covers the principal types of African societies. Its theoretical value is in no way inferior to its practical usefulness to the administrator and the missionary.

Two more publications, somewhat in the same direction should be noted: the first of three volumes announced by G. Wagner, *The Bantu of Northern Kavirondo*<sup>34</sup> and the second volume of Professor Fortes' work devoted to the Tallensi,<sup>35</sup> which undertakes an analysis of the tensions developing in a polygamous society.

Dr. Léon Pales takes a very different point of view, but one no less essential to the knowledge of those mechanisms which regulate the functioning of African societies. Under the auspices of the Institut Français d'Afrique Noir, he is preparing the publication of his monumental inquiry into native diets. In regard to a race of African origin transported to Antilles soil, we should mention the work of Alfred Métraux.<sup>36</sup> Other books are in preparation. Among these, the work of G. Balandier and P. Mercier, both associated with the Institut Français d'Afrique Noir (IFAN), and Mme Paulme's study on the Kissi are of particular interest.

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<sup>32</sup> Among recent contributions to anthropology from the Soviet Union, published there or elsewhere, we should like to mention the work of V. N. Tcheretsov, D. A. Olderogge, A. Kondaurou, F. D. Gourevich, all of which was published between 1946 and 1950 in specialised Soviet journals; mention should further be made of the important study of R. Jakobson, 'Slavic Mythology', in Funk and Wagnall's *Standard Dictionary of Folklore* (New York, 1950); the *Atlas to the Prehistory of the Slavs*, by K. Jazdzewski (2 volumes, *Acta Praehistorica*, I, Lodz, 1948-49); and, finally, the monograph of Th. Chodzilo, *Die Familie bei den Jakuten* ('Internationale Schriftenreihe für Soziale und Politische Wissenschaften'. Freiburg, 1951).

<sup>33</sup> Oxford University Press, 1950.

<sup>34</sup> Oxford University Press, 1950.

<sup>35</sup> *The Web of Kinship Among the Tallensi*. Oxford University Press, 1950.

<sup>36</sup> *Making a Living in the Marbial Valley, Haiti*. Paris: UNESCO, 1951.

The more traditional forms of inquiry, too, are drawing their profit from this renewal of interest. Thanks to the work of J. P. Lebeuf, the ancient civilisation of the Sao is starting to emerge. Mr. Leakey is publishing his findings with regard to cultures even more archaic,<sup>37</sup> and Abbé Breuil has just reported from South Africa the uncovering of rock paintings representing personages of a Nilotic type reminding one, occasionally, of ancient Egypt. These discoveries, perhaps, may authorise the great prehistorian to insist on his theory regarding the advanced age of at least some of these paintings. The amazing English discoveries, finally, of bronzes and terracotta figures at Ifé are still fresh to our minds.

In a series of articles published two years ago in the *Southwestern Journal of Anthropology* (1950–1) J. Greenberg has taken up the whole problem of African language classifications and arrived at such revolutionary conclusions as the affirmation that there is a relationship between the Sudan and the Bantu tongues.

Swedish methods of distribution on maps are illustrated in H. Tegnæus's *Le Héros Civilisateur*.<sup>38</sup>

Assisted by a group of researchers of the first rank, including Mmes Dieterlen<sup>39</sup> and de Ganay, M. Griaule has begun to unravel the skein of mythological, philosophical, and symbolic systems of the Sudanese. These discoveries, complemented by the work of M. Leiris,<sup>40</sup> have made a great deal of ink flow. It has been said even that the Dogons and the Bambara play a role today in French philosophical thought analogous, though inverse, to that which the Arunta played forty years ago, when the research works of Durkheim and Lévy-Bruhl were first published. It was at that time a matter of proving, on the basis of an indigenous example, that primitive thought proceeds in categories which cannot be reduced to those of civilised thought. On the contrary, however, Griaule and Dieterlen are pleased to recognise in the cosmological theories of the Sudanese forms of thought very close to those of the ancient Greeks or Egyptians. The relationship is beyond doubt. It awaits, however, an adequate interpretation. Are we faced here with an original development, on the local level, of Mediterranean themes subject since ancient times to innumerable variations, including those brought by Islam? Or should the Sudan be considered, as certain philosophers feel inclined, rather imprudently, to consider it, as the conservatory of the most authentically archaic

<sup>37</sup> *Excavations at the Njoro River*. Oxford University Press, 1950.

<sup>38</sup> Upsala, 1950.

<sup>39</sup> *Essay on the Bambara Religion*. Paris, 1951.

<sup>40</sup> *La Langue secrète des Dogons*. Paris: Institut d'Ethnologie, 1948.



forms of thought in the western world? Only the publication of the texts and their philological and anthropological analysis will allow a decision in favour of one or the other interpretation.

The appearance of an imposing series of anthropological treatises within the space of two or three years is the surest indication of the increasing prominence of theoretical preoccupations in this field.<sup>41</sup> However different in their methods, all these works arrive at the common conclusion, first proposed by Marcel Mauss,<sup>42</sup> viz., that any social system forms a whole and that it is impossible to understand any one aspect (economic life, religion, social institutions, art, etc.) without considering it in function of the whole. At the source of this veritable *credo* of contemporary ethnology—put within reach of the cultivated public by Clyde Kluckhohn's prize-winning book, *Mirror for Man*, New York, 1949—there are various influences. Each of them is responsible for a particular trait of the hypothesis: Marx, Boas, Freud, Malinowski, Radcliffe Brown, and the phonological school of Prague. This new approach has been adopted by the sixth and last edition of the most celebrated manual of research, *Notes and Queries on Anthropology*.<sup>43</sup>

The concept of structure provides a common denominator for ideas which are often divergent. It is significant that the term 'structure' appears with growing frequency in the titles of general works.<sup>44</sup> True enough, the analogy stops there. While the functionalism of Radcliffe Brown remains close to organic considerations and takes its models from psychology and biology, Murdock uses a statistical method to establish correlations between isolated traits and reconstructs his ensembles empirically. On his part, Lévi-Strauss seeks to define 'structure' with the aid of 'constants' which should be extracted from an intensive analysis of total cultures and from certain forms of modern mathematical thought.<sup>45</sup>

<sup>41</sup> The principal ones are: A. L. Kroeber, *Anthropology*, 2nd ed., 1948; M. L. Herskovits, *Man and His Works*, New York, 1948; R. H. Lowie, *Social Organization*, New York, 1948; S. F. Nadel, *The Foundations of Social Anthropology*, London, 1951; R. Firth, *Elements of Social Organization*, London, 1951; and K. Birket-Smith, *Geschichte der Kultur*, Zürich, 1948.

<sup>42</sup> *Sociology and Anthropology*. Paris, 1950.

<sup>43</sup> Published by the Royal Anthropological Institute of Great Britain and Ireland. London: Routledge and Kegan Paul, 1951.

<sup>44</sup> *Social Structure*, a Collection of Essays Compiled by M. Fortes in Honour of A. R. Radcliffe Brown. Oxford University Press, 1949; cf. also two other works, appearing the same year, both aiming at the formation of a general theory of kinship: *Social Structure*, by G. P. Murdock, New York, 1949; and *Les Structures élémentaires de la parenté*, by the present writer, Paris, 1949.

<sup>45</sup> cf. 'Language and the Analysis of Social Laws', *American Anthropologist*, 53, 2, 1951.

The phenomena of 'structure' are examined in other than static aspects. Numerous authors, principally American, devote themselves to the study of structure in the sense of 'pattern', or, in other words, as system of relationship offering specific combinations for each particular culture and providing for each individual the model to which he must assimilate in order to function as a member of his group.

Here we are at the border line between anthropology and psychology and even of psychoanalysis, since the process of assimilation is largely unconscious and connected with experiences some of which, at least, have an infantile character.

This proximity is attested by the recent work of Roheim and Devereux.<sup>46</sup> The latter describes, and comments on, the psychotherapeutic treatment of a Plains Indian and presents some theoretical views of great ingenuity. Above all he stresses the fact that any psychological analysis of a subject must be conducted within a frame of reference, which is given by his particular culture: An Indian might seem to be neurotic by the standards of white society. Yet he might be perfectly normal or, on the other hand, psychopathic, if his complaints are placed in the context of his own tradition. On the other hand, Devereux criticises the thesis by which the cultural 'pattern' would be integrally transmitted to the individual during his earliest childhood.

This problem of the connexion between infancy and society is the theme of a recent presentation by E. H. Erikson.<sup>47</sup> The author illustrates his thesis with comparative examples taken from two indigenous tribes, the Sioux and the Hurons, and from three modern societies, American, German, and Russian. Devereux and Erikson are both anthropologists and psychoanalysts. Another important contribution to the same subject is afforded by the work of H. Grandquist.<sup>48</sup>

Investigators grouped round Dr. Margaret Mead are trying to transform the concept of 'cultural pattern' as it has been defined above, extending it to modern societies. In this new interpretation, 'cultural pattern' becomes 'national character'. After some still unpublished experiments with the foreign colonies in New York City, Mead and Gorer have

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<sup>46</sup> *Psychoanalysis and Anthropology*, by G. Roheim. New York, 1950; *Psychoanalysis and Culture: Essays in Honor of Geza Roheim*. New York, 1951; *Reality and Dream*, by George Devereux. New York, 1951.

<sup>47</sup> *Childhood and Society*. New York, 1951.

<sup>48</sup> *Child Problems Among the Arabs: Studies in a Muhammedan Village in Palestine*. Helsingfors-Copenhagen, 1950. Two volumes were published previously.

taken up the problem of the American character and, more recently, of the Russian character.<sup>49</sup>

In an article appearing in the journal *Natural History* ('What Makes the Soviet Character') the author outlines her method. To begin with, a model of the pre-Revolutionary Russian national character was to be built by submitting *émigrés* to questionnaires and tests and by analysing written sources, 'seeking beyond these the human beings who produced them and who believed in them'. In the second stage, a model of the bolshevist intelligentsia was to be constructed. Finally, an analysis of official declarations was attempted, covering also the literature, films, etc., of the Russia of today. On this basis various problems were posed: what will be the evolution of children, reared in accord with the old system, when they are exposed to conditions implicit in the new, etc.? The conclusion appears to be that methods of swaddling and their evolution play a considerable role in the formation of the national character.

By a curious paradox, ethnography, which originally depended on documentation by observers on the spot and did not hesitate to traverse half the world in order to become an eye-witness, has experienced a transformation under the hands of Dr. Mead. It has become a kind of technique, operating long-distance and to the exclusion of any direct observation, to determine the most intimate driving forces of a civilisation.

It is not necessary to follow Mead in these adventurous enterprises to discover that anthropology is now sufficiently mature to approach the study of societies more complex than those to which it had been previously limited. The real question is to find out to what degree of complexity the anthropologist can progress with impunity.

An as yet unpublished inquiry, conducted in 1950 by Messrs. Bernot and Blancard in a French village called for the occasion 'Nouvelle', and employing methods of observation of a truly ethnographic and psychological character, has yielded very convincing results. But 'Nouvelle' had only five hundred inhabitants. It is by no means certain that the same methods could be applied in communities more populous, where direct observation might have to be replaced or supplemented by other methods such as statistics, questionnaires, and the study of samples.

However this may be, the modes of anthropological orientation differ widely according to whether we are dealing with relatively simple societies which are considerably different from the society of the observer

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<sup>49</sup> *Soviet Attitudes toward Authority*, by M. Mead. New York: McGraw-Hill, 1951.

and, for this reason, may appear to him as static, or with societies of a type more closely related to that of the observer, whose dynamic aspect therefore is more easily perceptible to him. In this respect it is striking to note that attempts to introduce dynamic perspectives in studies of the first type have hardly yielded more than the formulation of the negative concept of acculturation. On the other hand, studies of the second type have contributed toward placing the accent on the relationship between the individual and the group.

The most commendable collective effort on this problem, guided jointly by an anthropologist and a psychologist, is embodied in *Personality in Nature, Society, and Culture*.<sup>50</sup>

These differences in orientation are reflected also in national points of view. Thus Americans willingly consider themselves 'dynamists' in contrast to the 'static' attitude of their foreign colleagues. In the *American Anthropologist* for October–December 1951, G. P. Murdock states the case against the present tendencies of British anthropology. With regard to the African systems to which we have referred above, Murdock reproaches English anthropology with excessive formalism, disdain of history, and lack of interest in those aspects of social life which are not strictly institutional. To sum it all up in terms that are not indeed in the text of the article, the British school would seem to sin through static spirit, dogmatism, and scholastic methods. Its present orientation would approximate it closer to sociology than to ethnology in the true sense of the word.

In the same issue of the *American Anthropologist* a respected representative of the incriminated school, Raymond Firth, takes the defence and offers a better-shaded picture of the activity of his colleagues. But while he clarifies, in a number of ingenious observations, the respective position of the two masters of British anthropological thought, Malinowski and Radcliffe Brown—the former a romantic, the latter a classicist; the former mindful, in the first place, of the originality and diversity of each individual experience in the frame of the social group, the other anxious, above all, to define equilibriums and proportions—Firth enlarges the scope of the debate. The crucial question, he says, is whether the out-moded conception of anthropology will prevail, which, in order to preserve at any cost the solidarity among the different aspects of culture, would insist on artificially lumping together disciplines which have no longer any connexion between them, such as social anthropology and physical

<sup>50</sup>Clyde Kluckhohn and H. A. Murray, editors. New York: Harvard University Press and A. A. Knopf, 1949.

anthropology, technology, archæology; or whether the Social Sciences will finally be recognised as a unity, at least potential, under whose auspices social anthropology (to use here the British terminology) will proceed hand in hand with sociology, social psychology, and economics.

A quite different approach thus brings us back to the problem of the proper *placing* of anthropology among the sciences. This problem has been tackled most strikingly by E. E. Evans Pritchard, Professor at Oxford University, first in a series of lectures for the British Broadcasting Corporation, then in an article in *Man*, and finally in a book.<sup>51</sup> Is anthropology a science of Man or does it spring from the sciences of Nature? Is it a discipline connected with history and philology and differing from these traditional sciences only in the measure in which it occupies itself with civilisations greatly detached from our own?

If this view is correct, the relations between anthropology on the one hand and history and philology on the other would be similar to those established between the so-called 'classical' and 'non-classical' forms of these two latter disciplines.

Classical philology thus embraces Greek studies, Roman studies, and, more generally, anything touching on western civilisation. Anthropology would comprehend, together with the civilisations of indigenous America, Africa, Oceania, etc., a third group of civilisations still more remote. Apart from this division of labour, however, its preoccupations would remain the same as those of the other sciences of Man: to describe, to reconstruct, and to interpret the diverse forms of human experience in order to convey them in an intelligible form to those not having any share in them.

This way of looking at anthropological problems is exemplified, in its very name, by the School of Oriental and African Studies in London—a name which incorporates anthropological studies into the humanistic tradition.

Everybody today agrees more or less that physical anthropology and social anthropology are definitively setting out on separate roads. The former is undoubtedly destined to merge with genetics<sup>52</sup> while the latter is on its way toward becoming an autonomous discipline.

But is it necessary to see in the latter a 'culturology' as Leslie A. White

<sup>51</sup> *Social Anthropology*. London, 1951.

<sup>52</sup> cf., e.g., *Races, A Study of the Problems of Race Formation in Man*, by C. S. Coon, S. M. Garn, and J. B. Birdsell. Springfield: C. C. Thomas, 1950; *Genetics and the Races of Man*, by W. C. Boyd. Boston: Little Brown, 1950.

would have us<sup>53</sup>; or is a further split likely to ensue (as Firth and Evans Pritchard seem to suggest) dividing the field between a *cultural anthropology*, dedicated 'to the study of the sum-total of accumulated resources, both non-material and material, which social experience permits us to utilise, to modify, and to transmit'; and a *social anthropology* which would stress, above all, the 'human component, the individuals, the relationships by which they are united'.<sup>54</sup> The real problem is whether this division, acceptable for reasons of a practical order, must, as Evans Pritchard proposes, draw social anthropology into the camp of the 'humanities'.

A broader discussion of this problem would lead us too far afield. The gist of all these debates is that anthropology is going through a crisis of conscience which, perhaps, is no more than a crisis of growth. Since the traditional social sciences (sociology, political science, law, and economics) seem incapable of dealing with anything but abstractions, anthropology feels increasingly aware of its traditional calling, which is to constitute a *study of man* in the true sense of the word.

Its mission, then, is, in the first place, to observe and to describe; secondly, to analyse and classify; finally, to isolate constants and formulate laws. This course, although traversed in a much more concentrated span of time, is no doubt parallel to that taken by the natural sciences. Yet anthropologists are aware of the fact that those constants cannot be found at the level of concrete observation and that the measurable aspects of social phenomena are as far removed from experience as, say, the data of geology and mineralogy are from the conclusions of nuclear physics.

Hence the discouragement, as manifested in certain efforts to limit a domain whose immensity affrights the researcher. His attitude might perhaps be different if he realised that anthropology, far from reducing itself to being just one of the social or human sciences beside many others, embodies the scientific aspect of *all* types of research concerning Man, while the other disciplines represent only the empirical aspect of this research.<sup>55</sup>

The work of Dumézil, furthermore, shows that history, too, can be structuralist.<sup>56</sup> No attempt must be made, therefore, to restrict the field of anthropology. It should be divided, rather, among various specialists, just

<sup>53</sup> *The Science of Culture*. New York: Farrar, Straus and Co., 1949.

<sup>54</sup> Firth, loc. cit.

<sup>55</sup> cf. Daryll Forde, 'The Integration of Anthropological Studies', *Journal of the Royal Anthropological Institute*, LXXIII, parts 1–2, 1948.

<sup>56</sup> *L'Héritage Indo-Européen à Rome*. Paris, 1949.

as the physics of the seventeenth century, for example, now finds itself divided up among a multitude of studies calling for experimenters and theoreticians, for tests in the field and work in the laboratory, for methods of observation and methods of analysis. In other terms, what is needed is not a reduction of anthropological ambitions. What is needed is a sound method of realising these ambitions. Such a method would certainly entail the breakdown of the traditional and self-contradictory distinction between the Sciences of Man and the Sciences of Nature; for all sciences rest on nature. The distinction is not founded on the true independence of the two domains, but merely on our own transitory incapacity to deal scientifically with the facts arising from the science of Man. If we finally succeed in treating them scientifically, they will no longer differ from the others.

Ethnology's contribution to progress in this direction is the discovery, to which anthropologists themselves are slow to awake, that it is the most concrete, the most qualitative, and the most limited observation which leads most rapidly, in the order of human facts, to the formation of general laws. To use an expression which, though coming from natural philosophy in particular, is valid for science as a whole, man is 'microscopic'.<sup>57</sup> The following example, which serves merely as an illustration, may bring us to the conclusion of these pages.

As human societies are founded upon communication, anthropology is coming to understand, step by step, that it must draw not only from the most advanced forms of linguistics such as phonology and structural linguistics<sup>58</sup> but also from research in physics and mathematics in so far as it has any bearing on the problem of communication.<sup>59</sup> From this angle, the *Preliminaries to Speech Analysis*,<sup>60</sup> recently published by the great linguist, Professor Roman Jakobson, co-founder, with Troubetskoy, of the so-called School of Prague, is a work of decisive importance in that it proves that the linguist, and even the logician, of our day can apply to the

<sup>57</sup> Pierre Auger, *L'Homme microscopique*. Paris, 1952.

<sup>58</sup> cf. in this respect, N. S. Troubetskoy, *Grundzüge der Phonologie*, published, in French translation, with some important additions by R. Jakobson, in 1949; E. Benveniste, *Noms d'agent et noms d'action en Indo-européen*, Paris, 1948; Zellig S. Harris, *Methods in Structural Linguistics*. Chicago: University of Chicago Press, 1951.

<sup>59</sup> cf. J. von Neumann and O. Morgenstern, *Theory of Games and Economic Behavior*, Princeton, 1944; N. Wiener, *Cybernetics*, Paris/New York, 1948; C. Shannon and W. Weaver, *The Mathematical Theory of Communication*. Urbana: The University of Illinois, 1949; *Colloque sur la Cybernétique*, edited by the Centre National de la Recherche Scientifique, under the chairmanship of Louis de Broglie. Paris, 1951.

<sup>60</sup> 'Technical Report' No. 13. Boston: Institute of Technology, 1952.

techniques of the engineer for a rigorous verification of his hypotheses.

At the very moment when attention was fixed on the great electronic calculating machines and their theoretical implications from the point of view of human communication, certain Africanists were formulating a theory of gong language, i.e., they discovered a form of communication among the native populations whereby these could transmit, on their wooden drums, the most complicated messages over often quite considerable distances. Specialists have not yet come to any generally accepted agreement as to the interpretation of these messages;<sup>61</sup> but in certain instances, at least, there can be no doubt that the gong language is based on a system of code analogous to that used in the electronic calculating machines, viz., the reduction of a complex system of symbols to a system of base 2. So the most primitive forms of communication are linked to the most modern.

However unexpected it may have been, the short circuit between disciplines so apparently at opposite poles in scientific research as ethnography and mathematical physics forebodes great upheavals in the study of man. In this revolution anthropology is now sure of playing a major part.

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<sup>61</sup> cf., for example, A. Schaeffner, *Une société noire et ses instruments de musique*. Paris: L'Homme, 1951. His observations seem to contradict those of J. F. Carrington, as expounded in 'A Comparative Study of Some Central African Gong Languages', Institut Royal Colonial Belge, Sciences morales et politiques, Mem. xviii, 3, 1949.

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#### ERRATA:

We wish to apologise for a number of errors in the text of R. D. Gillie's 'Discoveries and Disputations' (*Diogenes*, I, pp. 83–96), in particular we should like to draw the readers attention to the following:

Page 90, lines 6–7 should read: 'Iberian appears to be a preponderantly Hamitic language with Caucasian elements, while Basque appears to be a Caucasian language with some elements of Hamitic vocabulary'.

Page 95, line 9 should read: '... the axe of Kelermes was found in a barrow of the Kuban ...'