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TO ME the most revolutionary achievements in American culture history within the last decade are (1) the demonstration of implements contemporaneous with extinct mammals; and (2) the shifting of interest to South America rather than Mexico or Yucatan as the probable site for the development of the higher civilizations.

To be sure, any one of the discoveries under the first head can be explained without assuming geological antiquity. But the cumulative force of parallel findings in diverse regions is very strong. In the shell heaps of Tierra del Fuego neither Lothrop nor Gusinde was able to establish a stratification, yet from the extent of the middens and the agreement of their contents with the inventory of the historic Yaghan both authors infer that this tribe has occupied the Cape Horn archipelago "for a very long time." As Gusinde concludes, "*Viele Jahrhunderte zurück sind jene Schichten gelegt worden, die sich heute zuunterst der mächtigen Muschelhaufen finden.*" If the unstratified remains at the very margins of the hemisphere suggest a residence of many centuries to so cautious an investigator, how much stronger is the evidence since Mr and Mrs Bird's discovery of five distinct cultural layers near the Strait of Magellan, where the lowest artifacts are accompanied by bones of extinct ground sloths and horses!¹

The case for antiquity is strengthened by arguments of another order. How rapidly can human beings acclimatize themselves to six or eight radically distinct habitats? Penck, who raises the issue, holds that a guess of 25,000 years errs on the side of excessive caution.² Even if this figure seems exorbitant, the order of magnitude of 15,000 years no longer daunts us. Yet Kidder, who accepts such an estimate as reasonable, points out its perplexing implications.³ The whole trend of recent study, he states, is to shorten the scale for higher New World civilizations. How, then, are we to fill the void between, say, 15,000 B.C. and 1,000 B.C.?

Kidder is also keenly aware of our old archaeological scandal,—our inability to confront the Elliot Smith school with anything but faith so long as there are no antecedent American stages for the high cultures of Yucatan and Mexico. Kidder escapes the dilemma by pointing southward, which at first blush seems like "passing the buck." Actually his illuminating essay

¹ Martin Gusinde, *Die Yamana* (Mödling bei Wien, 1937), pp. 608-611. Junius Bird, *Before Magellan* (Natural History, 4, 1938), p. 16. sq.

² Albrecht Penck, *Wann Kamen die Indianer nach Nordamerika?* (International Congress of Americanists, 23, New York, 1930), pp. 23-30.

³ A. V. Kidder, *Speculations on New World Prehistory* (Essays in Anthropology in honor of A. L. Kroeber, Berkeley, 1936), pp. 143-151.

implies a program of work. But since its publication we have reached, in my opinion, a new stage. With the incubus of a Central American origin lifted, we can see more clearly and apply insights derived from the study of culture history as a whole to our two major problems, viz. How did the higher civilizations of America arise? And what happened during the preceding millennia? It is these questions I shall attempt to answer in my stride.

First, however, we must analyze the Central American obsession. Its initial axiom, that all complex civilizations rest on intensive agriculture, is sound enough. The error lies in identifying agriculture with maize. Given that foregone conclusion, it was natural enough to prop up the theory with what is *prima facie* satisfactory botanical evidence. Teosinte (*Euchlaena mexicana*), the closest relative of maize, grows wild in southern Mexico and Guatemala; hence, it was argued, maize must have been first domesticated there, its cultivation laying the economic basis for Aztec-Maya accomplishments.

The botanical support for this view has now broken down with the geneticists' proof that teosinte is not the ancestor of maize, but a hybrid of *Zea* and *Tripsacum*.⁴ *Ipsa facto* civilization may have evolved outside the teosinte habitat. But apart from this important result, there has really never been any warrant for treating maize and farming as identical concepts. In terms of world-wide applicability: it is sheer dogma to ascribe priority to cereals among domesticated plants; root crops and trees grown from shoots may well be earlier. On this broader issue Werth's discussion seems convincing, whether we reject or accept his plea for the Pluvial antiquity of the banana.⁵

To apply this idea to America, the relative age of maize and, say, manioc can certainly not be decided by the age-area principle. As Eric Thompson suggested some years ago, manioc even if earlier, must have failed to spread in equal measure because of inherent incapacity to weather the same variety of climates.⁶ On a wider basis Sauer has contended that the starch staples of our aborigines had a multiple origin, maize *not* being the first. He expressly repudiates the age-area postulate, arguing that of two concomitant crops, the local rather than the widespread species is likely

⁴ P. C. Mangelsdorf and R. G. Reeves. *The Origin of Indian Corn and its Relatives* (Texas Agricultural Experiment Station, Bulletin No. 574, College Station, Texas, 1939), esp. pp. 241-251.

⁵ E. Werth, *Zur Natur- und Kulturgeschichte der Banane* (Festschrift Eduard Hahn zum LX Geburtstag dargebracht, Stuttgart, 1917), pp. 22-58, esp. p. 48.

⁶ J. Eric Thompson, *Archaeology of South America* (Chicago, 1936), 13 f.

to be older in its own habitat. On what intelligible grounds, he asks, would intensive maize-growers in Colombia bother with the arracacha? But if the inferior plant is the earlier within the region, sheer conservatism might make for its retention.⁷ Let us add that by itself the diversity of process required for raising manioc, maize, and potatoes militates against a single origin for all agriculture.

The propositions arrived at, then, are:

- (1) If maize were the oldest domesticated species, its domestication would have to be traced to an area outside of Central America.
- (2) The priority of maize is an arbitrary allegation.
- (3) American cultivation has a multiple origin.
- (4) Hence, granting the necessity of intensive farming as the economic basis for complex civilizations, there is no longer any warrant for deriving all crafts beyond the crudest, all intricate social structures, or religious systems from any one source.

This last corollary seems important. Americanists have not, indeed, accepted in so many words Elliot Smith's description of the hunting-gathering Indian as an ape-like creature "almost wholly devoid of anything worthy of the name of culture." But they have often acted as though at bottom they held the same belief. It is only very recently that an archaeologist has dared express the belief that Eastern Woodland ceramics may have an Asiatic and, *mirabile dictu*, a pre-agricultural source.⁸ But if pottery can have a non-Mexican source, so can other features; and surely there are other alternatives than Asia and Central America.

Like other dogmas, that of a single high center is not wholly fictitious, as demonstrated by the role of the Near Orient, Rome, China, and modern industrialism at different periods. Admitting the occurrence of loans from ruder populations, we may readily grant that by and large the simpler peoples have been on the receiving line. What, however, has eluded many scholars is that in human history as a whole contacts of the type they envisage are in the very highest degree atypical. Among the thousands of cases of international and intertribal relations on record there are extremely few in which one of the "partners" towers immeasurably above the other both in numbers and in material equipment. Only fatal distortion can result from treating this abnormal condition as the universal pattern. In pre-Christian America this condition either existed nowhere or with exces-

⁷ Carl Sauer, *American Agricultural Origins* (Essays in Anthropology in honor of A. L. Kroeber, Berkeley, 1936), 291 f.

⁸ W. C. McKern, *An Hypothesis for the Asiatic Origin of the Woodland Culture* (American Antiquity 3, 1937), pp. 138-143.

sive rarity, and at no subsequent period was it anything but highly exceptional. The normal situation is: small differences as to population; and in culture infinitesimal quantitative but noteworthy qualitative differences. This allegation naturally requires proof.

Let us imagine nascent agriculture. For Redskins experimenting with manioc or maize or arracacha in 200 B.C. (or 500 or 1000 A.D.) such crops did not mean what they did to the Incas or Chibcha or the historic Pueblos. They meant what they mean to the Maricopa, the Ojibwa, the Canella. There was not and could not be any stability. The Canella can farm only in the galeria forests; when with the exhaustion of the soil the trips to possible clearings become excessively long, the village moves closer. Among the Maricopa "camp was frequently shifted as the (mesquite) bushes were stripped clean"; since the gathering of wild mesquite beans was more important than corn, migratory farming was inevitable. As Kroeber has convincingly shown, the pure hunters-fishers-gatherers in favorable areas maintained a much greater density of population than the aboriginal farmers of our Eastern Woodlands.⁹

In other words, the difference in level between hunters and incipient agriculturists is negligible; and the same principle obviously holds for any two communities starting to grow crops. In pre-Christian or early post-Christian America there was thus nothing comparable to the relations of Western industrialism to a petty Polynesian principality. The infinitesimal differences in complexity permitted diffusion in any direction, from one group of migratory farmers to another, from such farmers to hunters, and from hunters to farmers.

Any scheme of reconstruction that neglects this basic postulate leads to arbitrary deductions. Thus Dr. Haeckel in a useful collation of sociological data¹⁰ treats it as a foregone conclusion that the Canella could not have developed their complex moiety system, hence must have borrowed it from an "agrarian" Andean stratum intermediate between the high Western civilizations and the simpler Brazilian cultures. Unfortunately for the theory, the Andean region lacks both exogamy and the very complexities which require explanation; but the point relevant in this context is that nothing warrants the assumed chasm between the "agrarian" Andeans and the Canella, who for some time past have raised sweet potatoes, yams,

⁹ Curt Nimuendajá, *The Canella* (MS.). Leslie Spier, *Yuman Tribes of the Gila River* (Chicago, 1933), pp. 22, 48-50. A. L. Kroeber, *Native American Population* (American Anthropologist 36, 1934), pp. 1-25.

¹⁰ Josef Haeckel, *Zweiklassensystem, Männerhaus und Totemismus in Südamerika* (Zeitschrift für Ethnologie 70, 1938) pp. 426-454.

manioc, maize, and even *Cissus*, a plant unknown to both white and "higher" Tupí neighbors.

For corresponding reasons I remain dubious as to the part commonly ascribed to the Arawak. Some members of the stock have proved to make pottery or better pottery than their neighbors. In the vernacular I ask, "So, what?" Does this really imply that the Arawak everywhere showered cultural blessings on their benighted fellow-Indians? The sober facts suggest something different. On the upper Rio Negro an Arawak group met by Nimuendajú lacked not only cotton, but even a word for the plant. Within the area treated by Roth the isolated Otomac excel as potters, the isolated Warrau as purveyors of dugouts; the Cariban Arekuna diffuse blowguns and cotton, the Cariban Macusi supply other tribes with curare. If cassava graters are identified with the Arawakan Guinau, they are no less so with the Cariban Yekuaná. I am therefore as skeptical as Kirchhoff of the universal "donor" role of the Arawak. Any superiority they may have in specific cases is not of overwhelming character.¹¹

Most of us are more familiar with the Southwestern United States. There, too, recent research nullifies romance. Hill's scrutiny minimizes the difference often assumed between the Pueblos and the Navaho. Though he concedes that the latter probably derived their agricultural usages largely from the Pueblos, there is now abundant evidence of loans *from* the Navaho, —witness the antelope drive, the girl's adolescence ritual, sand-paintings, sundry magical practices and dances. That the Pueblos have not scrupled to borrow freely from even simpler Southwesterners is clear from a glance at the basketry in a Hopi household.¹²

Moreover, the typically minor differences in level among primitive peoples not only form no bar to *mutual* borrowing, they likewise permit cooperative elaboration on equal terms of specific phenomena spread over a wide area. Most ethnographers would place the Pawnee above the Omaha and the Omaha above the Teton. Is, then, the Grass dance of these groups derived from the Pawnee? Wissler has shown convincingly that nothing of the sort took place. A fusion of Dakota-Ojibwa and Omaha-Osage ideas

¹¹ C. Nimuendajú, personal communication. W. E. Roth, *An Introductory Study of the Arts, Crafts, and Customs of the Guiana Indians* (Bureau of American Ethnology, Report No. 38, Washington, 1924), p. 635. Theodor Koch-Grünberg, *Vom Roroima zum Orinoco* (Stuttgart, 1923), pp. 3: 348, 355 ff. Paul Kirchhoff, *Die Verwandtschaftsorganisation der Urwaldstämme Südamerikas*, (Zeitschrift für Ethnologie 63, 1931), p. 163 f.

¹² W. W. Hill, *The Agricultural and Hunting Methods of the Navaho Indians* (Yale University Publications in Anthropology, No. 18; New Haven, 1938) pp. 182-190. E. C. Parsons, *Pueblo Indian Religion* (Chicago, 1939), pp. 28, 1049 f., 1053, 1055 ea. (ed.), *Hopi Journal of Alexander M. Stephen* (New York, 1936). p. 53 f.

with Pawnee ritual led to the Pawnee Iruska, which was adopted by the Omaha and from them by the Dakota. These latter contributed new songs—a vital feature for Indians, as Wissler rightly points out—and social elements, thereby creating the modern Grass dance, which so powerfully appealed to the Pawnee as to make them borrow “from abroad a derivation of an older ceremony of their own.” This, however, we repeat, had itself leaned heavily on Dakota-Ojibwa and Southern Siouan models.¹³

The almost invariable fact directly observed in New World culture history is not dissemination from a center, but qualitative differentiation, followed by interchange in all directions.

For the early history of agriculture, then, we reckon with several mutually independent crop centers,—say, for the potato, for maize, for manioc; and not one of these need have originated in countries that subsequently harbored higher civilizations. Mangelsdorf and Reeves, to be sure, recognize Peru as “the primary center of domestication for maize.” But they expressly deprecate the interpretation that the wild ancestor was actually first domesticated there. On climatological and botanical grounds they assign the crucial first step to the area east of the Andes, including Paraguay, southwestern Brazil, and northeastern Bolivia. Peru simply was where maize “first reached a high degree of specialization as a cultivated plant,” while some such people as the Guaraní (who actually seem to have raised a variety of the ancestral pod-corn) would qualify as the literally earliest maize-growers.

We can now see why the South American hypothesis is not a mere evasion of the question how higher levels were attained. For the assumption is not that a complex system of husbandry suddenly sprang out of nothing. Quite the contrary. The potato may have been a Peruvian achievement (though Chile is not out of the question); but maize probably comes from Paraguay or vicinity; peppers and peanuts from Brazil; manioc and sweet potatoes from the tropical lowlands. The incipient cultivators of the several species were roughly on a par until a series of cultural interchanges happened to favor certain groups, allowing them to depend mainly on farming for food and thus providing basis for a proto-civilization. On this scheme we most emphatically do not simply substitute Peru for Yucatan. The pertinent synthesis of elements into a higher construct was not restricted to a single people. Peru itself in the proto-civilizational stage was not one cultural unit. But, as Thompson has aptly suggested, we must not under-rate the Colombians simply because they lacked architecture. As metal-

¹³ Clark Wissler (ed.), *Societies of the Plains Indians* (American Museum of Natural History, Anthropological Papers 11 New York, 1914, 1916), pp. 629, 862-872.

lurgists they invented tumbaga; and, as Sauer reminds us, they may well have played a part in the development of agriculture.¹⁴ Thus at whatever stage we view the American scene, there is no unique cultural ascendancy in any one area. The people who made an alloy of copper with gold and silver, producing a material as hard as bronze, were surely capable of other inventions.

In principle, then, one of our major problems is solved without recourse to transoceanic intervention or to spontaneous generation. But the bland assumption that before agriculture there was nothing is a still more vicious element in the traditional scheme than the theory of a single creative center. Here I revert to my other major query: How did the American aborigines disport themselves during the 10,000 years or so before farming? I answer with assurance: Not by ape-like browsing on the fruits nature provided, but by creating the innumerable *qualitatively* distinguishable social individualities revealed by recent observation and archaeological excavation. There has been not *one* hunting culture, but a series of dozens and dozens whose differences have simply been blurred by the traditional emphasis on agriculture.

Let us formulate the problem that confronted the earliest immigrants across Bering Strait. The inventory of their crafts depends on the dating of their advent, but even on a conservative chronology it could not have been anything but meagre. If the Chinese Copper Age does not appreciably antedate the second pre-Christian millennium, the Chukchi Peninsula surely had little to offer in 8,000 B.C. Even some of the traits traditionally linked with the proto-American layer¹⁵ can no longer be credited to it with any assurance. The antiquity of even the simple bow is a matter of controversy among archaeologists. The dog, once regarded as universal, appears to have been unknown to the Yaghan when first discovered; and its absence among so many Brazilians, including the Botocudo, Bororó, Kaingang, and Northern Gê, qualifies the force of the age-area argument. The dog is doubtless old, for it occurs among the Ona highly specialized for the guanaco chase, and the varietal differentiation is considerable; but it may not be *so* old as we formerly assumed.

The very earliest Americans, then, had very little to start with. Their descendants and successors naturally had more, partly through their own inventions, partly through subsequent Asiatic importations. But the conquest of any new environment was a challenge to human resourcefulness, which could not always be met efficiently, if at all. Hatt has pointed out the

¹⁴ J. Eric Thompson, *op. cit.*, p. 144. Sauer, *op. cit.*, p. 289.

¹⁵ Clark Wissler, *The American Indian*, 2nd ed. (New York, 1922), p. 297.

Canadian Indian's immobility in the winter time prior to the adoption of snowshoes.¹⁶ In the Amazon-Orinoco area rapid settlement became possible only with the possession of river craft. Members of the Pano, Arawak, Carib and Tupí-Guaraní stock could travel widely in their canoes; but the presumably earlier boatless Gê, Bororó, and Botocudo must have migrated slowly along the watersheds. To tribes of the latter category, the inundation of Bolivian forest tracts is no help, while for native paddlers it minimizes distances during the rainy season. Floods naturally not only solve, but also create problems: the Mojos had to erect domiciliary mounds; in Brazilian Guiana the Palikur settle on secure forested enclaves, or erect pile-dwellings, or spend weeks roving about as river nomads.¹⁷ Stone-working is doubtless an old technique. In the Chaco and part of the Amazon area it needs becomes obsolete not from advancement to metallurgy, but from sheer dearth of stone. Since tools were indispensable, substitutes of shell, teeth, bones, and hard wood were required, and the demand for them prolonged intensive hunting long after a respectable amount of tillage.

What a problem confronted any group entering a region with a new flora! The utilization of bitter manioc in the Amazon-Orinoco region is the acme of sophistication. Can we picture some of the Indians' earliest pre-agricultural experiences? Spix and Martius describe the violent illness of Brazilian slaves who had pilfered manioc fields mistaking *Manihot utilisima* for *Manihot aipi*; in Africa a Bongo in Schweinfurth's party died from eating unprepared bitter manioc.¹⁸ Again, there is the practise of drug-ging fish, which occurs in Australia and California, a fact that warrants referring it to a pre-agricultural layer. But a group, however indoctrinated with the technique, might meet with difficulty in a new district: failing to find the familiar narcotic plants, they would be obliged to seek equivalents by the process of trial and error. As Nordenskiöld has so neatly shown, fish are not stupefied in the Chaco because it lacks *Serjania perulacea* and *Hura crepitans*, the two species used north of Sta. Cruz, Bolivia. But according to Killip and Smith, who themselves observed the use of eleven species in Peru and Brazil, about a hundred South American plants served to drug fish. Among the most common they note *Tephrosia toxicaria*, a species of

¹⁶ Gudmund Hatt, *Arktiske Skinddragter i Eurasien og Amerika* (Copenhagen, 1914), p. 227.

¹⁷ Erland Nordenskiöld, *Comparative Ethnographic Studies*, 3: (Göteborg, 1924); p. 176 f. *id.*, *Forschungen und Abenteuer in Südamerika* (Stuttgart, 1924), pp. 185-188. Curt Nimuendajá, *Die Palikur-Indianer und ihre Nachbarn* (Göteborg, 1926), pp. 21, 29-33.

¹⁸ J. B. von Spix and C. Fr. Th. von Martius, *Reise in Brasilien*, Vol. 2 (München, 1928) p. 776. G. Schweinfurth, *The Heart of Africa* (London, 1874), p. 526.

the genus similarly applied in the southeastern United States. Again and again aborigines shifting from one tract to another must have vainly searched for their tried narcotics, experimenting with available related species until the possibilities were exhausted.¹⁹

Nothing brings the general matter closer to our comprehension than a detailed comparison of neighboring areas. Take Shoshoneans in the heart of the Basin area. If they came from a region so close as the Oregon-California border, they must have changed many of their habits before the pine-nut could become their staple food. In the Surprise Valley to the northwest of our hypothetical Shoshoneans *roots* are significant, pine-nuts negligible because virtually lacking. Now, pine-nut trees happen to have a capricious yield, abundant in one year beyond the possibility of complete harvesting, yet a total failure the next. Would-be survivors were bound to reckon with these facts. Moreover, since a good crop was too great for transportation, winters had to be passed near the storage places. Modes of settlement, in other words, hinged on this novel food supply. Other aspects of economic life likewise required revision: fish were unimportant in Surprise Valley, but locally significant for our pine-nut gatherers. On the other hand, if our Shoshoneans had previously lived among the Klamath, only a little west of Surprise Valley, fish would have been the staff of life, with pond-lily seeds rating second, and roots still important. Again, if Klamath Indians, into whose diet the acorn does not enter, moved south, they would realize the chasm between them and the acorn-leachers of central California. Yet not very remote in a southeasterly direction would be peoples concentrating their interest on the agave and mesquite.²⁰

Obviously there is not one "gathering" process, let alone, a single "hunting-fishing-gathering" economy. There are dozens of techniques required for "gathering": a seed-beater cannot be used to dig camas, nor is an agave knife serviceable in berrying. In short, totally different inventions are called for in different "gathering" habitats. And though scholars speak glibly of natives obtaining seeds *and* roots, the two are not identical.

¹⁹ Erland Nordenskiöld, *Indianer und Weisse in Nordostbolivien* (Stuttgart, 1922), p. 17. Ellsworth P. Killip and Albert C. Smith, *The Use of Fish Poisons in South America* (Smithsonian Report for 1930, 1931), pp. 401-408. F. G. Speck, *Ethnology of the Yuchi*, University of Pennsylvania Anthropological Publications of the University Museum, 1: (1909), p. 23 f.

²⁰ Julian H. Steward, *Basin-Plateau Aboriginal Sociopolitical Groups* (Bureau of American Ethnology, Bulletin 120, Washington, 1938), pp. 27 f. 39, 40. Isabel T. Kelly, *Ethnography of the Surprise Valley Paiute* (University of California 31, 1932), pp. 75-77, 95, 100. Leslie Spier, *Klamath Ethnography* (University of California 30, 1930), pp. 144, 147, 160. E. F. Castetter and M. E. Opler, *The Ethnobiology of the Chiricahua and Mescalero Apache, A.* (The University of New Mexico Bulletin, Albuquerque, 1936), p. 35 sq.

As Steward indicates for the Basin, seeds generally ripened and fell before complete exploitation was possible, while roots permit a longer harvesting period. As for "hunting," this word, too, means something utterly different according to the species sought. One does not stalk grasshoppers in a grasshopper disguise or harpoon rabbits or drive seals into a corral; and desert shrubs may be spaced so as to preclude the effective use of fire in a game drive.

If anything is needed to clinch the argument, there is the case of Fuegia. Here within virtually the same latitudes and in a similar climate live the Yaghan and the Ona, both on the simplest level known for America. Economically they are forced to lead a rover's life, hence build only the rudest of dwellings. They are pitifully clad in a forbidding environment; they lack pottery; for lack of an ax they must lasso timber in order to lay it low; and they have no means of drilling any but the softest materials. Yet notwithstanding the leveling influences of habitat and intertribal relations, the Ona and the Yaghan are qualitatively at opposite poles. The Ona dread the water, as their neighbors resent a cross-country march. The Ona chase guanaco herds with the aid of trained dogs; the Yaghan are water nomads dependent on mytilus shells and sea-mammals, and none of the earlier sources credits them with dogs. In the Ona food quest woman is negligible, among the Yaghan she is indispensable, paddling the bark canoe for the hunter and securing it to a safe mooring of kelp. From the Ona puberty festival females are rigidly barred, and the bullying of women is a prominent feature; the Yaghan initiate girls as well as boys. The Ona takes his wife from the greatest possible distance; the Yaghan, equally averse to kin marriage, avoids going too far from home. The Ona high-god is overshadowed by shamanistic beliefs, while his Yaghan counterpart is a far more live reality.

It seems necessary to add that Gusinde's reports materially modify the traditional picture of the Fuegians as ideal exemplars of maladjustment to physical surroundings. If they lack adequate shelter and dress, it is because they depend for heat on their fires and protect their bodies against the weather with a liberal coating of paint. A closer look at their economy reveals a host of specific observations and adaptations.

To resume the general argument: The ten or fifteen thousand years of pre-agricultural American history was not a period of loafing. During these millennia the immigrants and their descendants through a prolonged process of trial and error, converted the natural into a humanly acceptable landscape, creating the culture types, past and present. Our first task is to understand this ecological achievement in its totality. But that is not

enough. We must study the ramifications of these primary cultural developments in order to grasp the factors that make for change, the elements that are and that are not organically linked. Nothing but this prospect would seem to warrant attention to the minute variants of, say, Plateau or Basin culture. In this ferreting out of significant relationships it seems to me the bulk of the work remains to be done.

The strictly historical problems that pique our curiosity are too numerous to be indicated in their entirety. I can make only a random selection.

For one thing, I should like to see a critical appraisal of Latcham's work in Chilean archaeology.²¹ He reports an impressive system of irrigation and pre-Inca cities of stone structures with windows which, he holds, antedated their Inca equivalents, for which they served as models. Indeed, this author believes that "Inca civilization obtained many of its elements from neighboring cultures," a conclusion obviously in accord with the principles of the present paper and illustrating the impossibility of ignoring archaeological discovery for purposes of a well-rounded ethnological theory. Latcham's position further strikes a responsive chord in recognizing cultural transmission in either direction, from Tiahuanaco to Chile and vice versa. The sequence indicated is full of suggestiveness,—a pre-agricultural, pre-ceramic, bowless phase with spear-throwers and coiled basketry on the coast; an interior culture influenced by Tiahuanaco (600–900 A. D.), with maize, painted pottery, bows and arrows; an indigenous development (900–1100 A. D.) with agriculture, including irrigation, and llama-breeding in full swing, and a primitive form of architecture; finally, a period of Chincha influence, with substantial stone structures, an elaboration of textiles and woodwork, and the advent of bronze.

Another interesting question is in how far the Southeast of the United States has been influenced by the Amazon-Orinoco area via the West Indies. Stirling's conclusions are preponderantly negative; according to him, "convincing archaeological evidence indicating even sporadic contacts is almost completely lacking." He admits certain similarities, but ascribes them to an early Middle American impulse spreading in opposite directions around the Gulf and the Caribbean.²² In a way Mangelsdorf and Reeves support this conception, for according to them maize was introduced into

²¹ Ricardo E. Latcham, *Indian Ruins in Northern Chile* (American Anthropologist 38): p. 52 sq.; id., *Atacameño Archaeology*, *ibid.* (1936), p. 609 sq.

²² M. W. Stirling, *Florida Cultural Affiliations in relation to adjacent areas* (Essays in Anthropology in honor of A. L. Kroeber, 1936), pp. 351–357.

the Southeast primarily from Mexico.²³ I must confess that considering some of the ethnographic evidence along with this archaeological and botanical information leaves me in that "nebulous state" which according to Mason envelops the earliest Antillean aborigines;²⁴ and regrettably it is not dispelled by a dip into Lovén's useful compilation. In her well-known paper²⁵ Gower has assembled evidence that may be of unequal value but can hardly be brushed aside. Some of it, indeed, has greater force than she indicates. Fish-drugging by itself, e.g., is too widespread to count for a specific connection, but as noted above the Yuchi use the very same genus current in South America; and these same Yuchi practise the couvade not merely as a general parental taboo, but emphatically in the full-fledged South American fashion.²⁶ Agricultural data are not wholly convincing either way. If it is strange to assume that the Antilleans would have introduced their secondary crop, maize, rather than their staple, manioc, it is no less puzzling why Southeasterners receiving corn from the metate area should pound maize in wooden mortars in good Amazon-Orinoco-Tupinamba style. Quite recently Miss Palmatary, expanding earlier suggestions by Nimuendajú and Nordenskiöld, has indicated resemblances between the Antilles and the Amazon region, even between the Mound area of the United States and Santarem.²⁷ She has also brought home the geographical possibilities for wide diffusion of traits by peoples in possession of canoes. While the elements in question are too sophisticated to be assignable to great antiquity, they are of considerable intrinsic interest. Altogether I long for a thorough synthesis of both the ethnographic and archaeological data bearing on Southeastern and Mississippi Valley connections with the Caribbean and northeastern South America.

To turn to a quite different field, I know of no serious collation of South American myths and tales since Ehrenreich's day, nor of any systematic attempt to regard the subject in hemispherical terms. The questions that arise from even a casual inspection of the material are innumerable. A concordance, however provisional, seems an absolute necessity. I offer a few stray items that have come to my notice.

A pristine matriarchate resting on the use of ceremonial objects, fol-

²³ Mangelsdorf and Reeves, *op. cit.*, p. 229 f.

²⁴ J. Alden Mason, *Observations on the Present Status and Problems of Middle American Archaeology* (American Antiquity 3, 1938), p. 313.

²⁵ Charlotte D. Gower, *The Northern and Southern Affiliations of Antillean Culture* (American Anthropologist, Memoir 35, 1927).

²⁶ Speck, *op. cit.*, p. 92.

²⁷ E. Nordenskiöld, *L'archéologie du bassin de l'Amazone* (Paris, 1930). Helen C. Palmatary, *Tapajó Pottery* (Etnologiska Studier, 8, 1939), pp. 53-59, 121 sq.

lowed by men's discovery of the deception, their taking over of the regalia, and overthrow of feminine ascendancy, is the cardinal theme of the myth connected with the Ona initiation festival. We find it again among the Mundurucú of the Tapajóz, with the minor substitution of wind instruments for masks.²⁸

More surprising is the following: In Guaraní myth Sun and Moon figure as brothers. At night Moon comes perversely to embrace Sun, who fails to recognize him, but on the following night marks him with genipa. The version of the Šipaya, a Tupí-speaking tribe on the upper Curúa (an affluent of the Iriry, which is tributary to the Xingu), comes closer to the well-known Eskimo tale, for here a girl detects her incestuous brother by smearing paint over his face, whereupon he abducts her to the sky, hurls her down, and turns into the moon, while she changes into a tapir. In a fragmentary version from the Guarayú (Tupí-Guaraní stock) of Eastern Bolivia, the marked nocturnal lover is once more the Moon. The Canelos have Moon embracing a woman at night, who identifies him by blackening his face with genipa.²⁹

The Šipaya also picture their ancestors climbing to the sky on a rope, which breaks, causing some of the Indians to fall to earth, while others remain above. Years ago Im Thurn reported essentially the same tale in reverse, the Warrau and Carib both representing their ancestors as sky-dwellers who in part climbed down to the earth; a very fat (or pregnant) woman is said to have got stuck in the hole, offering an immovable obstacle to further descent. This clearly parallels the Mandan-Hidatsa story of Indians climbing to the earth on a tree which broke, so that many remain in the underworld.³⁰

Another Šipaya motif with Guiana and Plains homologues is that of the rolling skull.³¹ I am certain of having encountered Chaco variants, but

²⁸ M. Gusinde, *Die Selk'nam* (Mödling bei Wien, 1931), pp. 599-606. Albert Kruse, *Mundurucu Moieties* (*Primitive Man*, 7, 1934), pp. 51-57.

²⁹ Curt Nimuendajú, *Die Sagen von der Erschaffung und Vernichtung der Welt als Grundlagen der Religion der Apapocúwa-Guaraní* (*Zeitschrift für Ethnologie*, 46: 1914), p. 331; *id.*, *Bruchstücke aus Religion u. Überlieferung der Šipaya Indianer* (*Anthropos*, 14-15: 1921-1922) pp. 1002-1039; 16-17: 367-406, esp. 1009 f., 1020. Rafael Karsten, *The Head-hunters of Western Amazonas; the life and culture of the Jiboro Indians of Eastern Ecuador and Peru*, (*Societas Scientiarum Fennica, Commentationes Humanarum Litterarum VII 1*; Helsingfors 1935), p. 522. E. Nordenskiöld, *Indianer und Weisse in Nordostlivien* (Stuttgart, 1922), p. 157.

³⁰ Everard Im Thurn, *Among the Indians of Guiana* (London, 1883), p. 377. Washington Matthews, *Ethnography and Philology of the Hidatsa Indians* (Washington, 1877), p. 36 f.

³¹ E. W. Roth, *An Inquiry into the Animism and Folk-Lore of the Guiana Indians* (Bureau of American Ethnology, Report 30, 1915), p. 129. Nimuendajú, *Šipaya*, p. 369.

cannot at the moment find relevant notes; in any case the idea appears among the Apinayé (see below).

Again, the Šipaya tell of an old woman who kills people with a spade-shaped foot,—among them one of twin heroes, the other evading her so that her foot gets stuck in a tree. This seems to be a variant of the Assiniboin, Cheyenne, Blackfoot, Crow, Arapaho and Thompson River theme of Sharpened-Leg. But the Šipaya version does not stand alone in South America: the Warrau, the Canella, and Apinayé all have the theme in classical form, the last tribe combining it with the rolling skull motif.³²

The arrow-ladder episode, whose occurrence in Melanesia and America aroused Ehrenreich's interest, is found among the Guarayú and the Jivaro. These latter Indians also have the popular Plains story of two youths who burn a snake, whose flesh one of them eats, thereby turning into a snake.³³

Still more striking than the foregoing are two Fuegian tales. It is astonishing to find among the Yaghan the same antithetical pair of brothers as in California and the Basin,—the one trying to make life easy for humanity, the other frustrating his designs and introducing death. The conception, I insist, is quite different from the common Brazilian one of a clever and a stupid brother, and its being found in two areas so remote as the Cape Horn archipelago and the western United States is truly remarkable. Not less so is the recurrence in both Fuegian tribes of the "lecherous father" motif, known in the Basin and Plains as "Coyote and his Daughters." The details are so strikingly alike that they clamor for an explanation.³⁴

I believe that in addition to such specific elements for comparison there are certain more general characteristics of New World mythology which have been rather blurred by the efflorescence of tales that clearly belong to a different and, I suggest, later category. Among the basic features I should class the notion—much clearer among Fuegians, Californians, and Nez Percé than among Woodland and Plains tribes—of a truly mythical period subsequently transformed into the present world.

However, a great deal of preparatory work will have to be done before we can see clearly what is basically American and what should be reckoned regional frills.

³² Nimuendajá, *Šipaya*, pp. 370, 1020; *id.*, *The Apinayé* (The Catholic University of America Anthropological Series No. 8: 1939), p. 175 f. E. W. Roth, *op. cit.*, p. 195.

³³ Karsten, *op. cit.*, pp. 523, 532. For Guarayú, see José Cardus in Th. Koch-Grünberg, *Indianermärchen aus Südamerika* (Jena, 1927), p. 283.

³⁴ M. Gusinde, *Die Yamana* (Mödling bei Wien, 1937), pp. 1160–1183, 1240; *id.*, *Die Selk'nam*, p. 650 ff.

From mythology it is but a step to religion. One obvious task before us is to define the distinctive features of American supernaturalism. It is also an enormously difficult one, for it involves not merely a survey of the New World but a clear perception of at least the essentials of religion in other areas. No wonder that various broad generalizations seem to have erred at least in overstating the case. In 1924 I was inclined to treat all American instances of soul-loss as the cause of disease as the result of Siberian contact, because the cases I then knew were all centered in the Far West of North America. Learning of sundry South American examples, including a Fuegian one, I was naturally obliged to abandon the hypothesis.

Proof seems to be accumulating that possession, though rarer than in Asia or Africa, is by no means absent from the western hemisphere.³⁵ The evidence seems decisive for South America. I must content myself with three unexceptionable cases. In Brazilian Guiana a Palikur doctor retires behind a partition, sits down on his bench, and shakes his rattle. In the complete darkness of night his helper hands him a glowing cigar, then a mixture of whistling, moaning and chanting is heard coming from the compartment, the fire of the cigar is seen floating high up, and when this is followed by resounding footsteps, the first spirit has taken possession of the shaman, whose soul has freed itself from the body and summoned its spiritual allies. The Bororó data are strongly corroboratory. Certain kinds of food belong to the spirits and cannot be consumed before a propitiatory rite. The "bari" type of medicine-man goes into an ecstasy *finchè entra in lui il maeréboe*. Again, illness is generally due to objects shot into the patient by the maeréboe; when sucking out the cause, the shaman induces possession of himself by a spirit. The shaman acquires his powers in a vision, the spirit offering his services in return for obedience and an offering of bows and arrows: *in compenso egli s'incarnerà in lui quando verrà invocato, parlerà per bocca sua*, etc. Another type of shaman becomes such when the spirits enter him and *sono gli aroe que parlano in lui*. Finally, the Ona shaman summons his spirit by his song until it comes to take over the chant. In this respect Yaghan practice seems quite similar: the shaman by his song lures his tutelary to the site, before whom the doctor's soul recedes, and the spirit continues the singing.³⁶

³⁵ F. Boas, *America and the Old World* (International Congress of Americanists, 21: Göteborg, 1925), p. 27 "Ideas of personal contact between man and supernatural beings are quite frequent, but obsession and with it the various forms of exorcism do not seem to occur. The spirits may attack man but they do not enter his body."

³⁶ Nimuendajú, *Die Palikur-Indianer*, p. 92 f. D. Antonio Colbacchini, *I Bororos Orientali*

It is thus clear that spirits are believed to enter the shaman's body in a fair number of tribes. What remains to be determined is in how far they are believed to do so as pathogenic agents.

The Fuegian citations just given exemplify the importance attached to songs in religious life. As already stated, Wissler has emphasized their significance in the Northern Plains, and my Crow observations fully corroborate his view. Among the Botocudo of the Rio Doce, according to Nimuendajú, the shaman-chief of a settlement would induce the benevolent spirits to descend and stand beside a carved post; and a doctoring shaman would sing to make his spiritual patrons intercede with their great chief on behalf of the patient. Chanting may be less obtrusive among the Bororó, but in their greatest of rituals, the funeral ceremony, singing sets in with the decease of a person and is carried on incessantly in the men's house after the corpse has been carried there. The Apapocúva Guaraní treat songs as sacred, grade people by their ownership of songs, which one obtained in dreams from a dead kinsman, and are led by shaman-chiefs preeminent for their songs.³⁷ Speaking under correction, I offer the suggestion that in America there is a peculiarly strong and persistent attachment of song and supernaturalism,—stronger than in correspondingly large continental areas outside America, though I am of course aware that sacred chants are not rare elsewhere.

To turn to another aspect of supernaturalism, I should like once more to direct attention to the long series of Messianic cults brought to light in both North and South America by Mooney, Koch-Grünberg, Métraux, and Spier.³⁸ The point that previously attracted me above all others was the absolutely clear-cut evidence furnished by these movements on behalf of parallelism vs. diffusion. There is the independent claim of kinship with Christ; the anti-Caucasian crusade, with promise to nullify the enemy's superior weapons by supernatural power (Plains Ghost Dance 1891; Chiriguano uprising 1892); there is the emphasis on dancing, the deliberate flouting of practical economic tasks (Guaraní 1579, South Africa 1856); the reunion with the dead (Prophet Dance; Ghost Dance; South African cults).

"Orarimugudoge" del Matto Grosso, Brasile (Torino, no date, 1925?), pp. 77, 83-88, 92. Gusinde, *Die Selk'nam*, pp. 744-755; *id.*, *Die Yamana*, p. 1415.

³⁷ Colbacchini, *op. cit.*, p. 155. Nimuendajú, *Die Sagen von der Erschaffung*, p. 336.

³⁸ Th. Koch-Grünberg, *Zwei Jahre bei den Indianern Nordwest-Brasiliens* (Stuttgart, 1921), p. 19 ff. A. Métraux, *Les hommes-dieux chez les Chiriguano et dans l'Amérique du Sud* (Revista del Instituto Etnologia, 2, Tucuman 1931), pp. 61-91. Leslie Spier, *The Prophet Dance of the Northwest and its Derivatives: the Source of the Ghost Dance* (General Series in Anthropology, No. 1, Menasha, Wis., 1935).

At present, however, I should like to point out that these cults do not by any means conform to a single norm and that a thorough study of the typology of the American movements might be helpful. Spier has succinctly brought out the non-Christian basis of the doctrine currently associated with Wovoka: The earth is getting old and requires renewal; there is to be a reunion with the dead that can be hastened by a dance; a flood will overwhelm the earth and destroy or transform unbelievers. Now, cataclysmology is an inveterate part of Guaraní belief. The world is conceived as worn out and doomed to destruction by both fire and flood. When one of two mythical brothers pulls up the props the earth will tumble down. "Today the earth is old, our tribe will not increase any more. The dead we shall all see again. Darkness descends, the Bat comes down, and all of us here on earth are destroyed. The Blue Tiger descends to devour us." For no other reason than to avoid this catastrophe the Guaraní have been known to wander periodically over considerable distances between 1810 and 1912 under the guidance of shaman-chiefs whose respective revelations were to take them to an earthly paradise by means of singing and dancing. Skeptics were to be punished, e.g. by transformation into vultures.³⁹

Over and above basic and widespread features, however, the beliefs and rituals of our aborigines also illustrate that tremendous tendency to variation which has been one of my main themes. The point obtruded itself very early on me in connection with the Crow and Hidatsa. It has, I think, general validity. Take three Gê tribes,—the Canella, the Apinayé, and the Šerénte. There is a common stock of ideas, no doubt, but the differences are important. They share a Sun and Moon cycle, and the personifications of these celestial bodies are more than merely figures of mythology. But the manner in which they are supposed to affect human life varies radically. The Canella, who lay decidedly less stress on the subjective phase of religion than their congeners, receive no revelations from Sun and Moon; the Apinayé highly prize such experiences, especially with the Sun; the Šerénte notwithstanding their great reverence for both deities, can not communicate with them directly, but only through planets sent as their emissaries. On the other hand, a sick Canella summons the spirits of his deceased kin for aid, whom the ordinary Apinayé shuns, leaving such intercourse to a few persons chosen by the spirits. Again, in contrast to both the other tribes, the Canella lack the notion of soul-loss as a cause of illness; and the Apinayé perhaps more commonly ascribe disease to the shadow of some

³⁹ Nímuendajú, *Die Sagen von der Erschaffung etc.*, pp. 287, 318-320, 327, 399.

edible plant or beast, which produces symptoms revealing the species,—a conception peculiar to this people.⁴⁰

These specializations *may* in part be due to contacts with other peoples; but before any such hypothesis can be advanced even tentatively it is necessary to show what alien group possesses the distinctive traits. As things now stand, there is little evidence of such derivations and much of indigenous growth or what comes to the same thing, original remodeling of common ideas. For further proof we need only step to the Bororó, a people often thrown together with the Gê on the good old assumption that hammockless people without boats and simple or no farming are at bottom all the same.

Bororó ceremonialism culminates in the mortuary rites, which involve performances in the men's house (hence taboo to women); a hunt in honor of the dead; dramatization of a myth; a masquerade by the hunter, who must not be seen by women; the initiation of novices who now for the first time learn about the bull-roarers, which women are not allowed to see; the decoration of the bones and feathering of the skull for secondary burial. Now some of these elements are known to the Gê, but in a totally diverse context. Among the Šerente, for instance, the bull-roarer figures in the Mars cult, the votaries using the implement to summon the planet. The Šerente, too, have a bachelors' or men's house, but it is not associated with funeral rites, which reveal none of the distinctive Bororó features. On the other hand, wantons were rigidly excluded from the bachelors' dormitory from which any inmate who had premarital relations was at once expelled. Compared with the Bororó men's club as described by Von den Steinen, the Šerente institution appears as a nunnery beside a brothel. Again, initiation—apparently a subordinate element in the all-embracing mortuary festival of the Bororó—looms as a major ceremonial among both Apinayé and Canella, but once more with vital differences even between these fellow-Timbira.⁴¹

I plead once more for the intensive comparative study of related tribes in a restricted territory, not wholly or even primarily for the historical insight afforded, but because such comparison is likely to open our eyes as to the creative power of even simple peoples in fields where their minds are not hampered by an inferior equipment in coping with the malice of objective reality. And such detailed research will enlighten us precisely as to those dynamic factors of cultural change that are so often referred to and so rarely demonstrated.

⁴⁰ Nimuendajú, *The Apinayé*, pp. 132-150.

⁴¹ Colbacchini, p. 155 sq. Nimuendajú, *The Apinayé*, p. 37 sq.

Finally, it is high time to synthesize our present data on social organization. The growing body of South American material alone demands a review of our facts, for here again we must combine a grasp of the total picture with a searching examination of particular regions. My attitude towards Olson's sketch⁴² is not wholly negative. I cannot accept most of his historical conclusions, but he *has* brought out significant resemblances among remote moiety systems and, whatever criticisms may be made in detail, the broad sweep of his survey at least stimulates closer examination along many lines. Toward such future research I venture to offer some preliminary remarks.

First, it seems essential to segregate moieties with exogamy from non-exogamous moieties. I do not deny that units of the former category may lose their exogamous character, but unless there are specific indications that this development has taken place nothing warrants the equation. Pursuing this point I suggest that there may well be diffusion of features adhering to moieties (or other units) *without* there having been a single historic origin for the moiety (or other) systems involved. To illustrate, there is nothing improbable about connecting the winter-summer division of the Pawnee with the same idea of the Eastern Pueblos: the bisection of the tribe for ceremonial or games and the seasonal association of each half can be reasonably traced to a single origin. But this does not explain the matrilineal character of the Pawnee units, seeing that the hypothetical parental units are patrilineal; nor can we easily derive the endogamous Pawnee principle from any exogamous scheme with maternal descent.⁴³ Similarly, I should be astounded if the nickname appellations of the Crow clans were totally unrelated with those of the Gros Ventre. But this does not mean that the matrilineal clans of the Crow and the patrilineal clans of the Gros Ventre go back to the same origin. It means simply that these tribes borrowed from each other (or a common source) an attractive naming system. In short, I counsel caution in mistaking genuine proof for historical connection for proof of historical connection between things not affected by the evidence.

Since the keynote of my paper is Diversity, I wish to warn further against premature concentration on a few categories of social unit. The omission of associational life is rightly reckoned one of Morgan's gravest errors. Nimuendajú's recent work shows that we have still to reckon with

⁴² Ronald L. Olson, *Clan and Moiety in Native America* (University of California 33, 1933), pp. 351-422.

⁴³ J. R. Murie, *Pawnee Indian Societies* (American Museum of Natural History, Publication 11: 1914), pp. 549, 642.

surprises. The four marriage-regulating *kiyé* of the Apinayé do not conform to any type of organization hitherto described. Descent differs according to sex, sons following the father, daughters the mother. The *kiyé* are thus neither clans nor Australoid sections, though there is the pseudo-Australoid rule that an individual may marry into only one of the three other *kiyé*.⁴⁴ Incidentally, once more to confound the diffusionists, whence does this curious institution come? So long as it is known from just one tribe, shall we not simply treat it as a creature of Apinayé culture?

In social organization it seems especially desirable to concentrate on intra-tribal local variation. It is this detailed knowledge of variation from village to village that affords us some insight into the Pueblo clan system, its dynamics, its veritable essence. As Professor Linton once told me orally, the bewildering complexity of Southeastern society, even though no longer amenable to direct observation, may become simpler if viewed from the angle of local differentiation. A comparison of the Bororó of Kejara with those of the Rio des Gar as is similarly suggestive.

In conclusion—not that problems are running short—I should like to emphasize the need for studying correlations. My grievance here is not that they are frequently asserted, but that the assertion is generally unsupported by evidence. Here once more the double approach, extensive and intensive, seems indicated. I cannot regard it as sheer chance that the Trobrianders and the Tsimshian, both matrilineal and stressing the avunculate, have the same conflicts between clan and family loyalty. I think it is most interesting that the matrilineal Banks Islanders have features of Crow kinship terminology. On the other hand, there is much to be said for taking a series of closely related tribes sharing many features and discovering the differences that may indicate organic bonds. Why, on the British Columbia coast, is it the unilateral tribes that have the nomenclature generally associated with clans, while it is lacking among the clanless Kwakiutl? Why do the matrilineal and matrilocal Canella and Apinayé also recognize feminine house ownership, while the Šerénte are simultaneously patrilineal and patrilocal, with the men as house-owners? Whence that recurrence of autonomous land-owning patrilocal and patrilineal lineages which Steward has correlated with ecological conditions?⁴⁵ When we have established dozens of such empirical associations, we shall have a clearer conception of what does and what does not essentially belong together in human society.

⁴⁴ Nimuendajá, *op. cit.*, p. 30 f.

⁴⁵ Julian H. Steward, *The Economic and Social Basis of Primitive Bands* (Essays in honor of A. L. Kroeber, Berkeley, 1936), p. 331 sq.