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L'HOMME ET L'ÉCOSYSTÈME

FOSBERG, F. R. **Man's Place in the Island Ecosystem.** Symposium, Tenth Pacific Science Congress, Honolulu, 1961. Bishop Museum Press, Honolulu, 1963.

A symposium at the Tenth Pacific Science Congress, 1961, in Honolulu, on *Man's Place in the Island Ecosystem* was planned and presented as part of the Humid Tropics' Program of the Department of Natural Sciences of UNESCO. A volume embracing the papers and discussions has been published through the financial cooperation of UNESCO, the University of Hawaii, the State of Hawaii and the Bernice P. Bishop Museum ; it came off the Bishop Museum Press in 1963. We are grateful to Fosberg and Sachet for arranging the program.

For readers not familiar with the term *ecosystem*, first used by the English botanist Tansley, it is derived from *ecology* and has been employed mostly in the biological sciences to refer to the whole biological system of a pond or an island, the relation of the organisms to each other and to the environment in which they live. As applied, then, to the title of the symposium it would mean man's place in the biological system of an island, and in its widest sense to man's place in the world as a whole.

Since the central theme of the Humid Tropics Program is *human* ecology, there is some confusion about the theme of the papers read at the symposium. Were they to refer to the relation of man himself to the ecosystem or to what man has done to disturb the ecology of plants and animals in the Pacific islands? Some of the authors refer exclusively to the former, others to the latter and several to both. Be that as it may, contemporary scientists and philosophers attempt to explore the apparently inexhaustable ramifications of a theme concerned with man himself. The sum of the papers not only adds to our modicum of knowledge on ecology, but stimulates our thinking along that line.

The variety of topics — 16 papers on a range of subjects from flies to philosophical ideas — emphasises the great diversity of factors, physical and biological, which have to be reckoned with under the title of the symposium. In the papers on corals and coral reefs and on insects and birds, for example, some mention as to how these physical and biological phenomena apply to man would be welcomed by human ecologists. It is one thing to study the ecology of plants and that of animals, but something entirely different to try to arrive at the place of human phenomena in a biological system.

Among the outstanding papers is an excellent essay on *The Growing Second World* (i. e. the world of man and his ideas) within the world of nature. The discussion of this paper is also good, although many would take exception to some of the discussant's statements. The essay, concerned with the history of ideas regarding man's relation to the earth as a whole, brings out that an inquiry into man's place in the ecosystem must be pursued through the physical, biological and social sciences, and that it asks questions not only in biology and geography but also in philosophy. In that paper the approach to man's place in nature is through the history of ideas in *Western*, not excluding marxist, thought, as distinguished from that of Chinese, Muslim and Indian philosophers. From a broad humanistic and philosophic point of view, Western scholars contributed to knowledge by showing among other things that changes in the physical, biological and social environment made by man are of a very different order from those made by plants and animals. Man's changes result from the necessities of his culture, his traditions and values, from his dissatisfaction with society as it is, from his critical, inventive, and venturing ability to change his way of life.

The discussant, as a Russian, disputes the author's right to introduce Judæo-Christian thought which often epitomizes the relationship of man to nature in the injunctions of the Deity that man not only should be fruitful and multiply like plants and animals, but that in addition, he should « fill the earth and subdue it ; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth » (*Genesis*, 1, 28).

Another paper is on man's role in modifying the plant environment of New Zealand. The writer points out that European man in New Zealand has done more in a hundred years

to alter the biological aspect of the land than native man had changed since he first arrived in those islands. The ecological transformation, due to the introduction of a very considerable proportion of Europe's flora and fauna and grazing by millions of cattle and sheep in a land that two centuries ago knew no grazing or browsing animals, have been phenomenal.

But in line with the topic of the seminar, we would like to have heard how the island environment of New Zealand has affected the English, Scottish or Irish settlers who have been installed there for three or four generations. For example, do the English still talk of « going home » when they mean going to England. More pertinent, however, is the question, how much of the vegetation of the Salisbury Plain of England is reproduced in the Salisbury Plain of New Zealand? (See LOWENTHAL, David, & PRINCE, Hugh C., *The English Landscape*, in *Geographical Review*, 54 : 309-346, 1964.)

The papers dealing with population are interesting ; one of them on population pressure gives a good definition of overpopulation, that is when it leads to a decreased standard of living. This author discusses the population of the Azores to bring out analogies between them and the Pacific islands, especially in the problem of overpopulation. He states that the wisest course (from the point of view of the Fijians) would have been to refrain from introducing sugar cane plantations there until the native were accustomed to the idea of « paid work ». What he means is regular day-in day-out work, something far from the philosophy of the indigenous people. In the reviewer's opinion, if this suggestion had been followed, commercial sugar growing would not be introduced yet, perhaps never.

In thinking over the circumstances of the native population of those islands since Europeans first came there, we recall Rousseau's doctrine, *Retour à la Nature*, which holds that mankind can be noble and happy only in primitive society. In view of the fact that East Indians were introduced to work on the sugar cane plantations and that they now considerably outnumber the native Fijians whom they are pressing to the wall, the latter would be happier today if neither the Europeans or the Indians had ever come.

Another writer dealing exclusively with Fiji makes several statements which contradict the Burns Report (Fiji, Council Paper No. 1, 1960), namely that Fijian independant farmers are « resolute and purposeful », and that the *kari-kari* (*kere-kere*) or « begging » system of their society is restricted in certain ways. The Burns Report, one of the more exhaustive recent research treatises on that archipelago, contravenes those statements.

The author of the paper on population pressure in the islands makes one statement wide of the mark. He maintains that a narrow and limited (he means restricted, preindustrial) insular environment molds men in a particular way, and tends to reduce their ability to adapt themselves to other environments. But what about Irishmen? They were brought up in a narrow and restricted pre-industrial society. Not only did they adapt themselves to the new environment of the United States, but they and their descendants became great leaders economically and politically in the new milieu.

Another demographic paper holds that whatever the vital balances of the peoples of the Pacific islands were in the pre-war years or the remote past, they are now similar to those of the stable peasantry of the great mainland cultures. This daring statement is not proven by the paper and would be extremely difficult to substantiate. Furthermore, do the great mainland cultures referred to include those of China and the United States?

The paper on physical environments, well illustrated, including a map of the thousands of Pacific islands, showing their distribution, surveys the differences in location, size and shape, origin and composition of landforms, drainage and climate.

In a volume as comprehensive as this is, minor deficiencies are likely to occur. For example one paper refers to « standing crop » and « sustained yield, » but does not state for whom — the natives of the islands or the Europeans — the crops referred to are raised. Statements by another member of the symposium are apparently contradictory ; for example he maintains that the island ecosystem may be looked on as a model of larger ecosystems, and later, that theories and techniques work better in the places where they are developed than in other areas. A few statements are not clear. What are « ordinary mathematical methods? » « An ancient rock island is likely to have anything in the way of vegetation ! » (Exclamation mark is the

author's). « The unity and the diversity of living things are equally important and equally wonderful. » So what ! Students of the cultural geography of the Pacific islands question estimating the « short time future » of atolls as « in the next five to six thousand years. » And the fact that Tansley coined the term *ecosystem* hardly gives one of his disciples the liberty to invent *masculinize*, even if the writer is a woman.

What conclusions — perhaps one had better say inferences — are to be arrived at as a result of the symposium ? I cannot agree in all points with the geographer who attempts the task, a difficult one, of summing up the ideas presented. He states that we ought to be neutral in our study and to consider man simply as an organism. But man as a social creature cannot function except in terms of the culture of his particular society ; it is impossible to study man as if he had no culture. Whether geographers acknowledge the fact or not, much of their work is ecological or very closely related to ecology. The most fundamental of all ideas is man's idea of his own existence, his concept of himself and his destiny.

I take exception to the statement in the summation that each ecosystem is capable of being readily grasped as a whole. Not in the present state of our knowledge. Several papers propound a theme overlooked in the summary, namely that environmental relationships in time and space must be integrated. Yes. Any living organism has to be studied at a particular time and in a particular location.

There is substantial agreement that the factors which enter man's place in the ecosystem are legion. Also that some of them do not lend themselves to easy measurement, for example, « the anthropocentric community's demands on men for its functioning. » Here we have to bring in the computer and have an ecologist direct the programming.

A scholarly biogeographer, Dansereau, not a member of the symposium, maintains (*Ecological Impact and Human Ecology*, unpublished paper) that the mysteries of historical plant geography which gave birth to ecology still remain a closed book to the scientist. In a study of ecology he calls for great imagination as well as support from the accumulated facts of the biosphere. He maintains that the realization that ultimately matters is that one ecosystem differs from another in tempo and mode.

There are several basic things which a researcher in the biogeography of man in the ecosystem of the Pacific must make clear at the beginning. First, with what man in the islands is he concerned : the Polynesian, the first comer ? the European, who brought a whole new range of thoughts as a result of the ecosystem to which he had been adjusted for thousands of years ? or the Oriental, whose ideas were largely shaped by the social and economic environment in which his forbears lived ? And what about the great mixture of ethnic groups in the islands ? If a graft of a particular variety of a tree is made on another, the ecology of both plants would have to be studied to understand the full result of the graft.

At this juncture it is proper to ask how is the idea of ecosystem to be applied to geographical research in general ? We differentiate between Tansley's term by which he means the whole biological and physical environment interacting together, which is a functional or operational concept and the geographer's *ecumene*, a spatial or territorial concept. The recent report of the *ad hoc* Committee on Geography seems to relate geography to the idea of *ecosystem*. It considers geography as dealing with various kinds of « spatial systems, » defining a system as « a functional entity composed of interacting, interdependent parts. » (*Geographical Review*, Vol. 51, No. 1). Since both terms are human « constructs, » no one will understand an entire and discrete *ecosystem* or *ecumene* because neither is ever really entirely discrete or separate. However that does not gainsay the worth of trying to be holistic.

Teilhard de Chardin, scholarly Jesuit (*The Phenomenon of Man*), considers man at one and the same time a product of past evolution and an active agent in its future course. Considering religion as part of the evolutionary process, and an important element, in its psychological phase, of human history, he linked science and religion across the bridge of evolution, which is manifested by changes in ideas and societies and cultures, as well as in organisms and their genetic constitution. Chardin's unique contribution was to link evolutionary biology with Christian theology.

Some philosophers, while admiring Chardin, regard his argument as too teleological if not theological, in seeming to think that there is a built-in upward and onward drive in evolution, whereas that, after the human self and society have developed, it is largely up to man himself what his future will be. Others, more pessimistic, maintain that there is no guarantee that man won't spoil his opportunity, but still hope that the more responsible individuals will come to their senses before it is too late.

If we subscribe to the doctrine of holism, may philosophers not contribute largely to the idea of ecosystem? Is man nothing more than a collection of atoms shaped in the form of an animal, or is he the man of the Psalmist (*Psalm* 8, 5) « a little lower than the angels ... crowned with glory and honor? » Can man's place in an ecosystem not best be studied by philosophers, physical anthropologists, social anthropologists, ethnologists and classicists? Will someone arrange a symposium of scholars in those fields?

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UN NOUVEAU TRAITÉ DE GÉOGRAPHIE DE LA POPULATION

CLARKE, John I. **Population geography.** Oxford, Pergamon Press, 1965. x-164 p. Figures, bibliographie, index. Coll. *Pergamon Oxford Geographies.* (Au Canada : Pergamon of Canada, Ltd., 6 est, rue Adélaïde, Toronto 1, Ontario).

La plupart des traités de géographie de la population publiés jusqu'ici avaient pour auteurs des géographes français tels que Mesdames Veyret et Beaujeu-Garnier et monsieur Pierre George. Aussi faut-il saluer avec intérêt ce nouvel ouvrage dont l'auteur, ancien élève des universités d'Aberdeen et de Paris, est maintenant professeur de géographie à l'université de Durham. Au moment où nous rédigeons ce compte rendu, nous savons qu'un autre manuel a paru récemment, celui de Wilbur Zelinsky, mais nous n'avons malheureusement pu l'examiner encore. Constatons donc que la géographie de la population, qui a maintenant ses auteurs, est en voie de se développer comme l'un des chapitres les plus importants de la géographie générale et régionale. Monsieur Clarke explique pourquoi il s'en est tenu à publier d'abord une géographie générale de la population et annonce qu'il prépare une géographie régionale qui paraîtra sous peu.

Un premier chapitre, fort intéressant même s'il est un peu court (p. 1-6), est consacré à la définition de la géographie de la population. S'appuyant principalement sur Trewartha et Hooson, Monsieur Clarke montre que la géographie de la population a pour objet de démontrer comment les variations spatiales dans la répartition, la composition, les déplacements et la croissance des populations sont reliées aux variations spatiales dans la nature des territoires (« *nature of places* »). La démarche du géographe se distingue ainsi de celle du démographe en ceci principalement que le géographe a le souci constant de rapporter les données démographiques diverses aux espaces géographiques et que le recours aux cartes est chez lui une préoccupation constante. On peut évidemment trouver un peu ténue cette distinction, elle n'en reste pas moins fondamentale. L'auteur ne manque pas d'opposer la conception de la géographie de la population qui peut avoir cours dans les pays occidentaux, d'une part, à celle qui se rencontre généralement dans les milieux scientifiques qui s'inspirent du marxisme. Nous avouons ne pas nous rendre complètement à ces distinctions. Il ne fait pas de doute, par ailleurs, que, dans les pays d'économie intégralement planifiée, les géographes ont été amenés à utiliser davantage leur géographie de la population dans les perspectives du développement régional. Les outils et les concepts fondamentaux ont pu, dans ces circonstances, s'éloigner un peu des préoccupations qui caractérisent les pays où la géographie de la population est une discipline purement académique.

L'ensemble de l'ouvrage s'inspire de la définition formulée dans le premier chapitre. Le plan est bien charpenté et l'ouvrage se recommande par ses qualités de clarté. Nous mentionnons seulement la matière des principaux chapitres : problèmes posés par l'utilisation des sources ; répartition mondiale de la population ; mesures de densité et de répartition ; populations rurales et urbaines ; types de composition de la population ; types de fertilité ; types de mortalité ; migrations ; croissance des populations ; population et ressources.