why I think of paleoecology as a post-classical development in stratigraphy. There are, of course, two other antonyms of *classical* that may have echoed in the minds of some readers; but if some paleoecology is *modernistic* or *baroque*, so, I think, are several of the basic evolutionary problems listed by Mac Gillavry, notably those posed by Kurtén.

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VA Hospitals

I am glad to see from your news report of 19 March (p. 1426) that the postwar improvement in Veterans Administration hospitals is continuing. But an experience leads me to believe that the general concept of budgeting for government hospitals may be responsible for a form of social entropy —effort entailing a measurable dissipation of energy that cannot be transformed into useful work.

On my first assignment as a ward medical officer in a military hospital, I inherited about 100 patients, many of whom had been on the sick list for many months. Fresh from a very active surgical internship in a private university hospital, I carried my customary level of activity into this ward and soon had all but 15 or 20 patients back to duty. I reduced significantly the hospital census and the average length of stay. The only reward for this was to be assigned additional duties. I later came to appreciate that the budgeting of government hospitals is based largely on patient-day occupancy. If a hospital is budgeted for 36,500 patient-days of care, it is immaterial to the budgeting authority or the hospital administration whether 100 patients occupy the hospital for 365 days each or 1000 patients for 36.5 days each. The entropy lies in the fact that the hospital has the same physical plant, personnel, patient-care costs, and upkeep whether the 100 or the 1000 patients are attended. The patient-day cost will be higher in the more efficient hospital because of the increase in medical, laboratory, and clerical work.

From the figures in your news account it may be calculated that in 1964 the average stay of patients in all VA hospitals was about 56 days. The figure is skewed by the inclusion of patients in the 5 tuberculosis and 39 psychiatric hospitals, but a figure for the short-stay hospitals is available in statistics for 1958–60, which show that the mean length of stay in the 124 general VA hospitals was 41.2 days, in federal hospitals other than VA 11.9 days, in nonfederal hospitals 8.1 days, and in all short-stay hospitals combined 8.4 days ["Hospital Discharges and Length of Stay: Short-Stay Hospitals, United States 1958-60," *Dept. Health Educ. Welfare Series B, No. 32* (1962)]. What the optimum length of stay in a VA hospital is I do not know. If it should be 20 days, for example, then only 50,587 beds would have been required (on the basis of 80-percent occupancy) for the 738,583 admissions reported for 1964, instead of the 121,000 beds the VA now maintains.

Dissatisfaction with the availability of all types of medical technology in the average general hospital is reflected in the report of the President's Commission on Heart Disease, Cancer, and Stroke [*A National Program to Conquer Heart Disease, Cancer and Stroke*, vols. 1 and 2 (Government Printing Office, Washington, D.C., 1964, 1965)]. The commission has recommended the establishment of high-quality treatment centers to be constructed and supported for the *quality of patient care*. These centers will need to justify sustained support on the basis of reduced morbidity and improved results, not upon bed occupancy. Quality of care for many less frequent diseases is dependent upon the proficiency of the staff. The level of proficiency is a function of the number of cases managed per unit time as well as of the training of the staff. The incidence of a disease in a given population and the number of cases that a staff must manage per unit time in order to remain proficient should be the fundamental determinants of the number of treatment centers of different types. The assumption that equality in the number of beds available per unit population assures equal distribution in the quality of care is archaic. Society cannot support exhaustive treatment centers for every disease just at the patient's doorstep, and to try to do so in the presence of a good transportation system is wasteful. The Veterans Administration is correct in closing its smaller and more remote general hospitals. I only wonder if it should not close additional hospitals as rapidly as Congress will permit and concentrate even more intensely on the development of high-caliber treatment centers, quality control in therapy, and research in expeditious patient care.

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Committee for Professional Opportunity

Last summer a group of scientists at the Marine Biological Laboratory at Woods Hole formed a Committee for Professional Opportunity on the basis of the following declaration:

Negroes constitute a minute fraction of the American scientific community. The waste of Negro talent, originating in racial discrimination, deprives American science of its full potential. This inequity is a social and moral challenge to the humanizing and liberating spirit of science. A basic cause of the under-participation of the Negro in science is the lack of adequate educational opportunity, beginning with the earliest levels of schooling, in North as well as South. To make opportunities equal in fact as well as in theory will require an extended period of time. We believe that it is time for scientists themselves to take positive action and make special efforts now to accelerate the entry of Negroes into all aspects of scientific work.

Educational institutions throughout the country are beginning to undertake measures which will help improve the quality of education for small numbers of Negroes. Examples of activities being currently discussed or initiated are: (a) An examination of ways and means for helping to bring Negroes into the stream of American technological and scientific professional life; (b) Promoting the entry of Negro students by providing special preparation prior to college entrance, and special financial and tutorial aid to matriculated students; (c) Extramural activities, such as summer programs for teachers in Negro high schools, and programs to improve educational method and content in Negro colleges and universities.

Recognizing our responsibilities as individual scientists:

We welcome and will actively solicit applications from Negro science students and from scientists who seek to work in our laboratories or departments as technicians, graduate students, research assistants, or staff members.

We will endeavor to help in securing loans, scholarships, fellowships, time-off for course work, free or reduced tuition, for those applicants who wish to continue with course work or graduate studies.

If an applicant for graduate study does not satisfy certain requirements of our respective institutions, but is otherwise an individual with potential for successful

work in science, we will try to arrange suitable adjustments to allow the applicant time and facilities to make up such deficiencies.

We will solicit our colleagues who teach and do research in Negro colleges and universities to collaborate in research projects and to participate for stated periods in the work of our laboratories and departments.

The declaration bears the signature of 32 scientists from 18 institutions. We should like to ask the readers of *Science* to join us in this declaration by getting in touch with the undersigned.

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The Continental Shelf

In the editorial of 2 April (p. 25), the statement is made that under the Convention on the Continental Shelf, adopted at Geneva in 1958, a coastal state's right to explore and exploit "the adjoining seabed and subsoil out to wherever the sea is 200 meters deep . . . is exclusive; no other state can stake a claim within this limit. At greater depths, possession goes with ability to exploit." This carries the implication that beyond depths of 200 meters a coastal state's right to exploit the seabed is not exclusive. In other words, a foreign country having the technical capacity could occupy such offshore areas along our coasts and start operations for exploiting the natural resources of the seabed and subsoil. If true, this would be a serious deficiency in the Convention, but it is not the case.

Article 1 of the Convention, which defines the continental shelf, was the culmination of several drafts prepared by the commission beginning in 1951. In its first draft, the commission adopted the criterion of exploitability for the granting of rights in the coastal state, rather than the mere existence of a continental shelf in a geologic sense. In its 1953 draft, exploitability was abandoned as a test of jurisdiction in favor of a fixed legal edge, which the commission felt was essential in any legal concept. It therefore adopted the limiting depth of 200 meters (approximately 100 fathoms)—the depth at which the continental shelf in the geologic sense generally comes to an end and the continental slope begins. This was considered to be sufficient for practical purposes at the time and probably for many years to come. In the final draft in 1956, both concepts were adopted—the fixed legal edge of 200-meter depths *and* the exploitability test. While maintaining the limit of 200 meters as the normal limit corresponding to present needs, the commission was of the opinion that where exploitation is practical, there is no justification for applying a discriminatory legal regime to such regions. The final language adopted by the commission and embodied in Article 1 of the Geneva Convention reads as follows:

> For the purposes of these articles, the term "continental shelf" is used as referring to the seabed and the subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas.

Throughout its commentaries on the final draft article, the International Law Commission emphasized that it was departing from the geologic concept of the continental shelf and was embodying something more than the 200-meter limit. Indeed, there was sentiment in the commission that favored the use of the term "submarine areas" instead of "continental shelf," but the latter term was retained because of its wide use in the literature. This understanding of the scope of the term "continental shelf" in Article 1 is fundamental, because subsequent paragraphs of the Convention, which spell out the nature of the rights granted, make use of the term. Thus, Article 2, paragraph 1, provides that "The coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources"; paragraph 2 specifies that the rights referred to in paragraph 1 "are exclusive in the sense that if the coastal State does not explore the continental shelf or exploit its natural resources, no one may undertake these activities, or make a claim to the continental shelf, without the express consent of the coastal State"; and finally, paragraph 3 provides that "the rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation."

It would be difficult to read into this language an intent to establish two kinds of rights—exclusive and nonexclusive—in the offshore submerged areas. It would have been strange indeed for the United States, which was first to enunciate a continental-shelf doctrine for the purpose of protecting a coastal state's offshore natural resources from foreign exploitation (the Truman Proclamation of 1945), to support an international convention that posed the possibility of a foreign country's appropriating the submarine areas beyond our geologic shelf. Nor does it seem reasonable that the smaller maritime nations with less advanced technology would have acquiesced in such an agreement. The Geneva debates record no such apprehension.

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Too Much of Too Little

One basic characteristic of American journals received no mention in the recent series of letters concerning editorial practices.

It is almost impossible for an American author to work on a subject extensively for several years and then present all the evidence he has accumulated, together with his interpretation, in a sizable article. There is a premium on short papers dealing with small segments of the work. The total number of pages published by the time the study is completed greatly exceeds the number that would be required for one comprehensive paper in which a much more adequate job could be done. In spite of the shortage of space in our journals it is still easy to publish any number of neat little case reports with one or two figures, one table, and a review of the literature (in which it is proved that the Black and White syndrome should properly be known as the Schwarz and Weiss syndrome because the latter authors described the condition one year earlier in the *Verhandlungen* of some obscure society). But it is so difficult to publish the one longer paper that most of us have learned by bitter experience to submit the short ones.

It would seem fitting, in view of the justly growing concern about the mushrooming of the literature, to give primary editorial consideration not to neat, compact form but to accommodating as much new information and constructive, stimulating thought as possible.

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