All those people in the White House, now chosen by the single President, ought to have some kind of direct responsibility to the people. After all, we are a democracy. At least the chief assistants ought to be so chosen. Finer would have them be heads of departments, except for one or two who would be deputy or assistant Presidents. But it would be corporate cabinet. Its decisions would be collective ones, and all members would be responsible for them. As for their qualifications, Finer would make it necessary for all of them to be members of Congress or at least to have served four years in that body. Incidentally, this would, he feels, have a beneficial effect on Congress, about which he is even more caustic, in its present state, than he is about the Presidency.

There is more to this. Any critic who passes what might be called the constitutional barrier—that is, who allows himself to consider what he would recommend if the Constitution did not exist—is pretty certain to make some suggestions shocking to those who will not give themselves this freedom. These suggestions, moreover, involve not only the organ of government they have set out to consider, but all the others as well. The relations are too intimate for any to be considered in isolation. So Finer has a few suggestions to make about Congress as well as the Presidency. The Supreme Court—perhaps on the grounds that he had stirred up enough controversy already—he leaves pretty much alone. In the end, the debate will involve that body too.

What shall we say of these criticisms and suggestions? I prefer, at this moment, to say that the criticisms are valid. They do point to the need for change, and drastic change. As to the suggestions, it seems to me inevitable that we shall go back to the state of mind Madison was in a few months before the Constitutional Convention of 1787. Concerning the Executive, Madison said that he was not certain in his own mind whether he should be one man or whether he should be so situated as to be *primus inter pares*—the first among equals. How is that to be done? If we are to reverse the Fathers' judgment that the President should be one and try to make him a collectivity, how shall we dispose the relationships among the *pares* so that the Presidency will exhibit initiative, wisdom, and dedication; so that jealousies and ambitions will be minimized; and so that the public interest will become the first and last thought of everyone involved? That is the problem posed for us.

Herman Finer has made a suggestion. We shall hear from others. The first problem for the listeners, the undecided, in this debate will be to listen without prejudice, without preconception, and especially without constitutional blinders. It ought to be recalled that Washington, Franklin, Morris, Wilson, and all the others attendant on that Philadelphia conclave recognized no binding duty to the document under which they were *then* governed, and that if they had, they would have been stopped from producing the one we have been governed under ever since. Not even such charters are immune to the erosions of time and change.

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Africa Today and Tomorrow. An outline of basic facts and major problems. John Hatch. Praeger, New York, 1960. 289 pp. $4.

Events in Africa are moving much too rapidly for publication schedules to keep up with them. Inevitably, any book dealing with Africa which attempts to give an outline of basic facts and major problems is out of date before it can appear. *Africa Today and Tomorrow* was completed in the middle of 1959. Since then there have been major changes in almost every African country. The former French territories, with one exception, are now independent nations. Rioting in Nyasaland and more recently in Southern Rhodesia has raised questions about the long-term stability of the Federation of the Rhodesias and Nyasaland. A threatened African rebellion in the Union of South Africa has been crushed, but crushed in such a way that hostility between white and black has been exacerbated. The last few weeks have brought independence to the Belgian Congo, followed by violence, economic chaos, and intervention by the United Nations.

At the same time that the Africa which John Hatch wrote about has been changing rapidly, world interest in the affairs of that continent has become more urgent. More and more Americans are coming to feel that they need some guide to the continent which will help them to understand the reasons for African unrest, their demands for independence, and their needs for economic and technical assistance. Hatch has provided a succinct and informed account of recent African history which should be very useful as a background to the news reports that are now in the foreground. The focus is upon political and economic developments, each country being described in its turn. Hatch, who is an Englishman, has concentrated upon the regions where British interests have predominated. Some 175 pages deal with these areas. The discussion of the Portuguese territories and of the former territories of Belgium, France, and Italy is much sketchier. A final chapter, entitled "Future perspectives," attempts to predict the trends of the future. No one could quarrel with his conclusion that "All the signs in emergent Africa point to a revolutionary situation. . . . No one can doubt that during the next few years a series of revolutions will occur in every area of the continent—some constitutional, some violent, some in co-operation with the immigrant Europeans and Asians, others characterized by bitter racial antagonism."

Two useful appendixes conclude the book. One gives a brief chronology of major dates in African history; the other is a short gazette listing the various countries with their populations, principal products, form of government, and type of franchise.

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Prehistoric Investigations in Iraqi Kurdistan. Robert J. Braidwood and Bruce Howe. University of Chicago Press, Chicago, Ill., 1960. 184 pp. $5.

This book purports to be the story of a long-term field project aimed at shedding light on how settled village-farming communities first came into being; but all kinds of evidence from many major prehistoric and some early historic sites in southwestern Asia are presented and discussed in considerable detail by Braidwood and Howe. Specialized dating techniques, climatological evidence, paleoethnobotany, and the archeology of animal domestication are dealt with separately by Frederick R. Matson, Herbert E. Wright, Jr., Hans Helbaeck, and Charles A. Reed, respectively. Reed happily emphasizes the grave dangers of attempting to

extrapolate climatic sequences from phenomena observed in far-off Western Europe.

The senior authors draw a clear and coherent picture of cultural development in the area, from the assemblage of "pebble-tools, flake-tools, and Upper Acheulean type hand axes" which were still in vogue there "at the beginning of the Würm glaciation" or shortly before, through the following "Mousterian," "blade-tool," and microlithic industries down to the dawn of "incipient cultivation," which was heralded by the development of equipment for grinding grain and polishing stone celts and ornaments. They draw an interesting distinction between the "food gathering" procedures of "middle paleolithic" and the "food collecting" systems of "upper paleolithic" communities. They also note the presence of an apparent hiatus between the "era of incipient cultivation" and the emergence of "primary village-farming" communities; but they go on to show that this is only a gap in a demonstrable continuum, which can doubtless be filled by further excavations. What seems to me their most important conclusion is that "the transition to the food-producing" stage was not correlated with any "radical change in climate or fauna."

This is not an easy book to read, but it is invaluable for reference: no student of southwest Asian archeology can afford to pass it by. The maps are numerous and excellent, the illustrations good, and the presentation as a whole is highly satisfactory from the practical point of view.

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On Motion and On Mechanics. Comprising *De Motu* (c. 1590) (translated with introduction and notes by I. E. Drabkin) and *De Meccaniche* (c. 1600) (translated with introduction and notes by Stillman Drake). Galileo Galilei. University of Wisconsin Press, Madison, 1960. 193 pp. $5.

The publication of these two early treatises by Galileo, well translated and helpfully annotated, and with fine introductions, is indeed welcome. Those whose knowledge of Galileo has been confined to the two major Dialogues and the papers which Stillman Drake has previously translated (in *Discoveries and Opinions of Galileo*) will find in these texts the methods and concepts later sharpened and clarified by Galileo in his more mature works. There is a sense in which Galileo's biography synopsizes the transition from the old science to the new. The *De Motu* comprises not only a series of arguments directed against various aspects of Aristotelian mechanics, but is itself Aristotelian in style. Although a scholastic impetus theory prevails and Galileo still speaks of natural and violent motions, the method of analysis of real motions, which he later employs more successfully, is there.

Galileo's tortuous arguments in these treatises are necessary for airing a number of questions ancillary to the development of "two new sciences," for the death pangs of old theories are also the birth pangs of the new. For example, to what and how will mathematics apply, and how can experiment be used to decide upon certain problems? Here we see Galileo groping toward the necessary deployment of mathematical idealizations and toward the application of what Mach calls a "principle of continuity," which are perhaps the most important prerequisites to a mathematical science of nature.

Among the more interesting chapters of the *De Motu* are those in which Galileo employs the logical analysis of time and continuity in refuting certain Aristotelian views on motion. These enable us to understand why, although Galileo held so many mistaken and confused views at this date on such matters as the behavior of bodies in free fall and on inclined planes, he was yet ultimately able to achieve so much. For the essential conceptual clarifications were to follow upon repeated applications of these early critical methods.

Of interest in the *De Meccaniche* is Galileo's use of incomplete inertial and conservation principles, prior to their articulation as principles, restricted though their application may be. On the whole, these texts reveal the thorny road which is scientific inquiry, of which we cannot be too often reminded. I recommend them to the general reader as well as to the historian and philosopher of science. We are indeed indebted to I. E. Drabkin and Stillman Drake for executing admirably a difficult and worthwhile task.

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Marine Biology. B. [sic] N. Nikitin, Ed. *Transactions* of the Institute of Oceanology, vol. 20, U.S.S.R. Academy of Sciences Press, Moscow, 1957. American Institute of Biological Sciences, Washington, D.C., 1960. 302 pp. Illus. Nonprofit libraries and AIBS members, $7.50; others, $10.

This is one of a series of works being translated and published by the American Institute of Biological Sciences, apparently on a trial basis. Since the *Transactions* of the Institute of Oceanology comprise the most comprehensive journal of oceanography published in the Soviet Union, it is fitting that one of the volumes should be selected for translation. Marine Biology is reproduced from clear, original, typewritten sheets, but lacks running heads. The translation is accurate, the illustrations are well reproduced, and the subject matter of this particular volume is an excellent sample of the sort of marine biological work being done in the Soviet Union. There are papers on bottom communities by such authors as Savilov, Turpaeva, and Sokolov; plankton is the subject of papers by Ponomareva and Beklemishev; there are systematic reports on mollusks by Filatova, on hyperiid amphipods by Vinogradov, and a number of papers by various authors on the age and growth of fishes.

The individual or librarian who picks up this volume 10 years from now will be somewhat puzzled. There is no indication of editorial responsibility (for the translation), and the title page implies that the volume is published directly in English in cooperation (perhaps) with the Academy of Sciences of the U.S.S.R. Nowhere is there any overt indication that this is a translation, and there is nothing to indicate who is responsible for the translation. There is no statement that this is an isolated volume, not part of an entire English series of this journal. Furthermore, it is not only translated, but it is rigorously transliterated; not a single letter of the Cyrillic alphabet has been left anywhere. As a result, there is nowhere any indication of the proper Russian spelling of the authors' names; most notably, on the title page the name of the editor should be V. N., not B. N., Nikitin. This was carried all the way through the references (which for some reason are numbered seriatim in the translation, although this was not done in the original) with the result