Book Reviews

The Modernization of Societies

The length of this review is in part justified by the sheer bulk of its subject, Marion J. Levy, Jr.'s **Modernization and the Structure of Socities: A Setting for International Affairs** (Princeton University Press, Princeton, N.J., 1966. 886 pp., 2 vols., boxed, $22.50). It is a gargantuan work, representing one sociologist's attempt to give to those primarily concerned with public affairs and the international field a sense of the importance of the social background (the "setting" of the title) for international affairs. What its intended audience will make of it is difficult to say, for it has all the virtues and faults of its author's previous writings. The former include a willingness to grapple with a formidable range and complexity of problems, coupled with an ability to state hypotheses and propositions with such admirable clarity that his reader cannot fail to see how they can be tested. The faults, equally generous, have to do chiefly with an orientation toward empirical evidence, to which we shall return in a moment, and an almost inconceivable prolixity. Let there be no mistake about this last point; Levy is not to be made the target of the cheap charge that he merely writes sociological jargon, for this is not the case. His own discussion of the uses of jargon in any field (p. 6) suggests how mightily he has labored to free this work of its burden. Having thus set his sights on unambiguous communication of some very difficult ideas, more's the pity that Levy was not better served by an editor as laconic as the author is verbose.

To return to the attitude toward empirical evidence, it is perhaps best to let the author speak for himself. "The references to empirical data or evidence should always be regarded as *hypotheses about the facts* and not as any definitive presentation of the facts themselves. In scientific work it is more important to be fruitful for further work than to be right" (p. 7). And in the accompanying footnote (p. 7), reflecting, no doubt, impatience with a charge so frequently leveled at his work, "The presentation here of material as hypotheses about the facts is not a function of a preference for hypotheses rather than the collection of data. . . . I hope that all the hypotheses about the facts made here . . . are fruitful in that either proof or disproof of them will teach us much more than we already know."

One can share the hope, but it is difficult to refrain from asking why, where the evidence *is* available and its analysis well advanced, Levy so carefully avoids consideration of it. This apparently deliberate avoidance of the use of evidence which would not only support but even strengthen his case seems almost perverse. For example, on pages 173 and 174, there occurs the following illustration of a crucial point: ". . . with regard to the employer-employee relationship in ordinary manufacturing concerns in the United States by contrast with those in Japan there are far more elements of functional diffuseness in the Japanese than in the American case. In many areas of Japanese production the acceptance of a job and the acceptance for a job imply a lasting obligation of employee to employer and vice versa." Very interesting, remarks the careful reader, only to be shaken by the footnote which insists (p. 174) that, "Once again I must emphasize that the statements of fact in this illustration may not be tenable, but at least in theory they are susceptible of confirmation or disproof." Just so, and there is not even a reference to the substantial published considerations of this very issue which do, in fact, exist. There is, indeed, no bibliography at all, so that the reader must in general rest content with the author's hypotheses about the facts, given the absence of any guidance into the evidence from China and Japan, the two countries from which most of the illustrations are drawn.

But, to turn from manner to matter, the scheme of the book itself deserves some attention. In a brief introduction, the author outlines his six objectives: to sensitize the reader to the social background for international affairs; to show that societies as wholes are interdependent in matters relevant to international affairs; to distinguish different types of societies; to show some of the elements common to all societies; to show some of the main variations among societies; and to show how "the main lines of similarity *underlie* the main lines of variation" (p. 5). The analysis of modernization is to proceed, then, on an explicitly comparative basis, placing all societies on a continuum. In order that the reader not miss the point that it *is* a continuum, the author resorts to the clumsy, but in his view critically important, device of referring throughout to "relatively modernized societies" and "relatively nonmodernized societies." Two elements serve as the basis of the continuum of modernization—the uses of inanimate sources of power and use of tools to multiply the effect of effort. A society is, therefore, more or less modernized "to the extent that its members use inanimate sources of power and/or use tools to multiply the effects of their efforts" (p. 11).

It is, perhaps, the imperfectly concealed sinologue in the author which then leads him to a discussion of five aspects of societies and five types of organizations. The aspects are role differentiation; solidarity; economic allocation; political allocation; and integration and expression. The five types of organization are kinship and family organizations; governments and associated organizations; predominantly economically oriented organizations; the armed forces; and "churches, schools, predominantly recreationally oriented organizations, and miscellaneous organizations" (p. 26)—in short, four types and one "other" category.

At the heart of the analysis of organizations and societies lies the author's distinction between ideal and actual structures, and early in his presentation he urges his policy-oriented reader to keep the distinction firmly in mind because of its theoretical and practical utility. As one example of

the importance of the distinction, he cites the now-familiar example of the large family unit of the Chinese, a unit achieved by only a small proportion of its members, never the average or even common form of the family in that society. "Nevertheless, one of the most significant structural features of traditional China is the fact that the ideal structures which the gentry both held and to some extent approximated in actuality were also the ideal structures for the vast majority of all Chinese regardless of whether they were actually able to live up to them or not" (p. 29). This is presumably one of those hypotheses about the facts, and the reader is spared having to think about it further, for the only reference to the literature on the Chinese family is to the author's own book *The Family Revolution in Modern China*, itself equally hypothetical. For the implications of such stability of discourse, the reader would do well to look at pages 122 to 125.

It would be incorrect to suppose that the discussion of modernization proceeds throughout at this inconclusive level. The two chapters of part 1, on the structure of relatively modernized and relatively nonmodernized societies, are to be recommended to anyone who has himself ever attempted even half as much. Particularly intriguing is the brief section on what the author sees as one of the major problems of the relatively modernized society, which is the requirement that the socialization of the individual must prepare him "for an unknown future."

Developed at very great length is a consideration of the common elements and main lines of variation in societies, and the principal relationships among them. Here the author is at his best, nicely advancing many earlier discussions of these issues in the policy context. More specifically, an effort is made on the one hand to show the student of public affairs that societies can and must be considered as wholes, and on the other to wean him away from reification and personification of societal units, a common feature of macroanalysis in the social sciences properly excoriated by the author.

How can the achievement of this complex work be estimated? Only, I would suggest, by the productivity of its insights. Will future studies use it as a starting point? The author has not, in fact, provided very clear points of departure for such an advance. Will it succeed in its avowedly applied aim of sensitizing the practitioner of public affairs to the contributions which social analysis may make to his effectiveness? Perhaps so, if he is adept at relating his planning and experience to the structure provided by the author. It can be done, but it is likely to be attempted only by those already highly committed to the view that social science does speak to the issues of the day, no matter that its voice be uncertain.

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Tectonics

The first edition of **Traité de tectonique** (Masson, Paris, ed. 2, 1965. 457 pp., F. 215), by Jean Goguel, which appeared in 1952, was translated into English by Hans E. Thalmann (Freeman, 1962). I reviewed the first French edition 11 years ago [*Journal of Geology* **63**, 397 (1955)].

The new French edition differs little in format and relatively little in content from the first edition. The first part of the book deals with field observations, the intermediate part emphasizes geometrical analysis, kinematic analysis, and mechanics, and the last part is concerned with synthesis and interpretation. Goguel, because of his background in mathematics and engineering, is especially well versed in kinematics and mechanics, but is also a first-class field geologist.

The next to the last chapter, 14 pages in length and entitled "Margin of uncertainty in tectonic interpretations," is new. It has obviously been inserted to consider two hypotheses that have been emphasized in recent years. One concerns the extent to which crustal shortening is involved in folding. V. V. Beloussov believes that folding is caused by vertical movements and that the opposite sides of the folded belt are no closer together after folding than before. Goguel believes that much folding, such as that in the Alps, involves crustal shortening, the opposite sides of the belt being closer together after the folding. This question is of the utmost importance in analyzing the dynamics of the earth. The vast amount of paleomagnetic data gathered during the last two decades has led many geophysicists and geologists to revive the hypothesis of continental drift. Goguel does not discuss the basic principles of paleomagnetism nor does he analyze the data. Instead he reiterates the old arguments against continental drift. He concludes that neither Beloussov's hypothesis of folding nor the hypothesis of continental drift is sufficiently probable to necessitate rewriting his final chapter entitled "Search for an explanation."

The chapter on isostasy has been rewritten. This has been necessitated by the great progress made in seismology during recent years. "But, beneath this crust, the mantle shows notable differences, at least in the upper part, and appears to be the site of phenomena that should play an essential role in the localization of deformation of the crust. The time is past when the geologist thinks he can confine his study to the crust."

Although 14 of the 215 figures used in this edition were not in the first French edition, 9 of them were in the English translation. Fifteen percent of the text is not in the first French edition; of this, 11 percent is completely new, but 4 percent was in the English edition.

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History of Medicine

Yacqūb ibn Ishāq al-Kindī, who died about 874 and to whom this compilation of recipes is attributed, was known as the philosopher of the Arabs. He was one of the greatest intellectual figures in Islamic history, not only in medicine and philosophy, but in other sciences as well [for details, see my article "Al-Kindī, a ninth-century physician, philosopher, and scholar" in *Medical History* **9**, 328 (1965)]. This compilation, **The Medical Formulary of Aqrābadhin of al-Kindi** (University of Wisconsin Press, Madison, 1966. 424 pp., $8.50), was microfilmed and reproduced from the original manuscript, No. 3603, at the Aya Sofia Library (Istanbul, Turkey) and it was translated into English and annotated by Martin Levey, with an introduction, an etymological and philological interpretation of the drug simples, and two indices added.

This scholarly work fills gaps in the study of Arabic pharmacy and the evolution of materia medica. In the in-