a larger ellipsoidal paper support *E*, and at the other is a smaller semicircular support *F*.

In lieu of thumbscrews a simple alternative mechanism may be used to maintain constant tension on the kymograph paper. A length of coil spring or rubber tubing connects the outer end of wooden bar *A* to the inner end of wooden bar *B*. The tension exerted will tend to increase the length of the apparatus. The length and elasticity of the spring or tubing, as well as the points of connection on the bars, are adjusted to conform with the anticipated length of the kymograph paper. To mount the paper, the device is shortened (which increases the tension in the spring) and slipped into the smoked paper, as described below. The spring is then allowed to extend the bars. This simple, constant tension arrangement obviates the necessity of manipulating thumbscrews.

In the use of the device, the coating of smoke is applied to the paper, and the paper is loosened on the drums and slipped halfway off. The carrier is inserted between the ends of the paper thus exposed, with the larger drum on the bottom and the smaller one on the top. Sliding the two bars and tightening the thumbscrew makes the paper taut, yet easily removed from the smoking drums. It can then be carried by means of the device to the kymograph, the device inverted, and the paper first slipped over the large driving drum. Then the smaller kymograph drum is moved to full extension, allowing the paper to be retained on the kymograph. The thumbscrew of the device is loosened and removed from the paper. After this maneuver the final adjustments of the paper on the kymograph drums are made. After the completion of the kymograph recording, the operation is carried out in reverse and the paper is transported back to the smoking apparatus for shellacking.

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Book Reviews

Microscopic Histochemistry: Principles and Practice. George Gomori. Chicago: Univ. Chicago Press, 1952. 273 pp. Illus. $6.00.

Microscopic Histochemistry is the first comprehensive review of both the theoretical bases and practical applications of the microscopic methods of histochemistry to be published since the classic but superannuated *Histochimie Animale* of Lison. Histochemistry is a relatively young laboratory discipline which deals with the identification and localization of the chemical constituents of cells and tissues. It embraces a variety of techniques that in general fall into two groups: (1) microchemical, the analysis of small amounts of tissue or isolated cellular components by modified biochemical procedures, and (2) microscopic, the characterization of chemical compounds in morphologically intact cells or tissues by such physical properties or chemical reactions as may be visualized with a microscope. This text is concerned only with the latter methods.

Dr. Gomori has divided his discussion into two parts: the first, a brief consideration of the general problems involved in microscopic methodology, including a commentary on the limitations and pitfalls likely to be encountered; the second, an extensive and systematic review of the various methods for demonstrating particular tissue components. In the latter section, each method is critically evaluated, and, in many instances, the author includes considerable information not previously published. Detailed directions are given for the procedures the author has found to be most satisfactory in his own experience.

As an acknowledged leader in the development of histochemical technique, Gomori is eminently qualified to write authoritatively on this subject—and indeed has done so. His presentation, however, can be understood with an elementary knowledge of inorganic and organic chemistry and is annotated with more than 1000 references to the original sources. The methods described do not require special apparatus and can be applied by anyone familiar with the routine procedures of histology.

Microscopic Histochemistry will be invaluable as a reference book for the cytologist, histologist, or pathologist interested in the chemical morphology of cells and tissues, and should also be of interest to other microscopists as a supplement to the more general handbooks on technique already in use.

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The Advance to Social Medicine. René Sand; R. W. Parnell, Ed.; Eng. trans. by Rita Bradshaw. New York–London: Staples Press, 1952. 655 pp. $8.50.

This scholarly volume by a distinguished proponent of the social uses and implications of medicine in its full range of services for the sick, and as an instrument of disease prevention and health promotion, reveals a lifetime of devotion, unusual industry, and tenacity of purpose. The 590 pages of economically phrased text, richly supplemented by generous footnotes, deals with practically all recorded civilizations and the history of science of nations around the world. The author quotes from many ancient and modern physicians, prophets, and philosophers.

The remarkably well-documented text is followed

by nine pages of bibliography of a general nature only, as used by the author in writing the present study. There are a 30-page index of place names, peoples, and subjects treated and an index of personal names of 25 pages more.

The plan of this reference book is simple and calls for no particular criticism—unless it be an expression of regret that the author's story of the first use of the term "social medicine" in 1898 by Jules Guérin does not begin until page 507, and is followed by some pages of recent and contemporary history in which the reader must choose for himself just what the term implies.

There are nine parts, or topical chapters, of which the first eight (506 pp.) are devoted to good, condensed histories of the medical profession, hospitals, personal hygiene, public health, social hygiene, industrial medicine, social assistance, and studies of man, leaving the last part (81 pp.) for "the advance to social medicine," in which the variegated picture of development in Europe, the British Commonwealth, the United States, and Japan occupies 40 pages.

On page 554 an effort at definition is made as follows:

> Medicine in the broadest acceptation of the word comprises everything taught in medical schools—the basic sciences, the clinical branches and hygiene. This is the interpretation placed upon it here because social medicine draws its substance from all these sources. . . . The branch of medicine with which we are concerned is social in both . . . the general, and a restricted sense because it pursues on the one hand the good of the community at large, on the other . . . making good the deficiencies of medical care, food, housing, and clothing in those classes of society which can not completely satisfy their requirements by their own efforts.

The late Sir John A. Ryle, the first Nuffield professor of social medicine at Oxford is quoted as follows:

> Social medicine means what it says. It embodies the idea of medicine applied to the service of man as *socius*, as fellow, or comrade. It embodies also the idea of medicine applied in the service of *societas* or the community of men, with a view to lowering the incidence of all preventable diseases and raising the general level of human fitness.

Social medicine is presented as a philosophy, a social point of view of health and disease in the human individual and in the group. In 1935 Sand voiced his own meaning as follows: "Social medicine is the art of prevention and cure considered, in its scientific basis as well as in its individual and collective applications, from the point of view of the reciprocal relations which connect the health of man with his living conditions." We are reminded of Sir George Newman's opinion that "social medicine existed even before history began and its emergence today is simply the result of its evolution from a negative to a positive force."

What we have developed in the United States under the name of public health services are generally referred to by Sand as social hygiene in the European, or continental, sense. The physician of the United States will find the creed or philosophy of social medicine as Sand proposes it rather heavily loaded with emotion. We are told that the advent of this new positive evolution of medicine in a complicated society is inevitable—with an origin to be traced back to prehistoric times.

This book is devoted to relating and reviewing the origins of social medicine. No evidence is offered of the failures chargeable to the multifarious attempts to put social medicine into effect by compulsory laws, and the creation of prepayment and so-called health insurance projects, especially among European nations. We need another and more critical volume by an equally erudite author who will reveal the social experience of some Occidental nations with morbidity, mortality, and personality development where political, financial, and professional factors have not favored the advance to social medicine as presented so persuasively by Professor Sand.

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The Principles of the Control and Stability of Aircraft. W. J. Duncan. New York–London: Cambridge Univ. Press, 1952. 384 pp. $8.00.

This text is concerned principally with the development of the general methods used to determine the dynamic and static stability of an airplane. From simplified dynamics, such as the rapid incidence adjustment, plugoid motion, and pure rolling, one is taken through the derivation of the dynamic equations of motion of a rigid aircraft, the separation into the symmetric and antisymmetric equations, and their solutions following the classical methods. Some mention is made of the operational approach. Typical numerical solutions are included for the roots of the longitudinal motion with controls fixed. More discussion of the solutions to show in detail the character of the long and short oscillation, and of the lateral modes, would aid the student considerably in understanding the processes involved in each of these motions and approximations that can be made for them.

The dynamic, longitudinal stability analysis leads to the static stability in the general sense, where the force and moment coefficients may be dependent on airspeed as well as on angle of attack. This approach to static stability brings out its full significance, often missed in the approach from statics alone. There is a chapter dealing with the concepts of and relations among the control fixed and free neutral points, maneuver points, and static margins.

The longitudinal trim problem is essentially bypassed, although it is an important aspect of control. No mention is made of body pitching moments or of downwash from flapped wings or of ground effects—things that determine the forward boundary of the useful center of gravity range.