Book Reviews

Loyalty and Security. Employment tests in the United States. Ralph S. Brown, Jr. Yale University Press, New Haven, 1958. xvii + 524 pp. $8.

At least one person out of five in today's 65-million-man U.S. labor force has survived some form of security or loyalty test in his current employment. In what Ralph Brown, professor of law at Yale University, describes as "the security-ridden professions"—some 600,000 scientists, engineers, and public administrators—one out of two (50 percent) is dependent for the opportunity to practice his profession or hold his job on his ability to meet loyalty-security criteria.

Is this bad? Brown's scholarly answer is neither a strident "yes!" nor a complacent "no."

The realities of coexistence with Soviet communism require that we maintain a security system that brings us close to the severities of a garrison state. At the same time we desire to maintain our prized constitutional freedoms and "those human decencies that we prize beyond the Constitution." The search for equilibrium between these competing needs poses problems for statesman, citizen, and professional that have troubled the best minds of our country for more than a decade.

"Our name for problems is significant. We call them headaches. You take a powder and they are gone. These pains . . . are not like that. They are like the pain of earning a living. They will stay with us until death. We have got to understand that all our lives the danger, the uncertainty, the need for alertness, for effort, for discipline will be upon us."

The words are Dean Acheson's; the quotation is a theme of Brown's book. To Acheson's evaluation he makes one significant addition: of equal weight with the need for alertness and discipline is the need to cherish respect for human dignity and individual freedom.

Capitalizing on today's relative calm, which has succeeded the storms of the mid-fifties, Brown applies that sober second thought, which is one of his profession's great contributions to society, to the tangled issues of loyalty and security as they affect employment in all areas of American economic life.

Tests of loyalty, as Brown sees them, are fundamentally tests of disloyalty and, specifically, of "a preference for communism." The attack on disloyalty thus defined has, however, widened in practice to include people who share with communists any preference that to some influential groups seems disloyal, or even politically objectionable. There is room within this formula for attacks on "the whole cloudy constellation of New Dealers, civil libertarians, internationalists, and eggheads." Since disloyalty thus conceived is at bottom a state of mind—as compared to the crime of treason, which requires for conviction proof of an overt act—tests for such a condition require an examination of beliefs.

"The desirable thing to do with loyalty programs is to get rid of them," says Brown—largely, I gather, because of their damping effect on that freedom of thought and expression to which honest opposition ought to be entitled if our democratic, open society is to maintain vitality. Conceding realistically, however, that this prescription is not likely to gain support even in the cooler air of 1958, he recommends at least a retreat to a policy which would require loyalty tests only for federal and state government employees—including public school teachers, members of the bar, and officers and staff members of labor unions. That such would be a retreat may surprise some readers, who have not heard that boxers and wrestlers, before they can appear in Indiana, must subscribe to a loyalty oath.

Security programs, by contrast, Brown sees as essential. To some extent security programs and loyalty programs cover the same field since judgments about past, present, and future disloyal conduct are part of the decision that a particular individual will conduct himself in the future in a way significantly harmful to a substantial national interest. Thus Brown concedes that, even if loyalty programs as such were abandoned, the thorny problems raised in any examination of beliefs would plague us still. They would be ameliorated, however, he argues, by putting them in the focus of a narrower question: Is this person one who *may* —with more than average probability —injure the nation? And he would sharply reduce the numbers involved by restricting security tests to employment in sensitive positions: those in which the holders could substantially injure national security.

To confine the excesses of loyalty employment tests within reasonable bounds, Brown sees it as essential that the accused employee be entitled to all of the procedural elements of a fair trial, including specific charges, an opportunity to confront those on whose testimony reliance is being placed, a fair hearing, a reasoned decision based on the record, and an opportunity for review of arbitrary decisions. For security programs, Brown recognizes that the analogy to decisions about suitability for employment generally is controlling and that due process must be measured by less rigorous standards: "the question is essentially the confidence of one man in another." Security programs are tolerable if their coverage is reduced, if standards and criteria are revised to emphasize "the whole man," if security officers are kept in an advisory role, and if hardship is minimized by "a forceful policy of providing other jobs for those who are excluded from security-sensitive positions."

Perhaps the most important parts of this book are not its conclusions but the material it collects, organizes, and presents and the care with which its analyses are reasoned. Its encyclopedic coverage and scholarly footnotes provide a wealth of guidance for those who must suffer the headaches in this troubling area of our national life, whether as security officers, counsel, board members, judges, legislators, executives or citizens. Its penetrating and exhaustive examination of every relevant facet and significant incident—loyalty tests in unclassified research, the employment policies of universities, the impact of security and loyalty on scientists and engineers, and many others—insures that it will have a permanent place in the literature of our political science. Its moderate and balanced tone makes it a guide to equity and reason in a field where both are all too rare.

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Matter, Earth, and Sky. George Gamow. Prentice-Hall, Englewood Cliffs, N.J., 1958. xiii + 593 pp. Illus. $10.

George Gamow is deservedly acclaimed one of the foremost interpretive writers in the field of science today. A number of his books and articles have been translated into as many as 16 languages, and he was awarded the Kalinga prize by UNESCO (1956) for his popularization of science. His success stems not only from the zest with which he

relishes and presents his material but also from his skill in weaving the principles and concepts of science into a pattern which is both meaningful and strikingly his own.

Gamow has repeatedly proved to be readable, and his latest book is no exception; it is a gay and exciting excursion into the physical sciences. The approach is a refreshing one. The book is written in the form of a trilogy, dealing first with things of our own size, second with the microcosmic world, and finally with the macrocosm. This departure from the usual historical approach allows a more continuous presentation of physics, chemistry, astronomy, and geology and will be appreciated by the general reader. It is evident that considerable effort and thought have been given to the problems of conjoining the contents of each section into a whole (this is most successfully accomplished in the macrocosmic section) and of keying the more difficult concepts of modern science to the simple level of presentation used in the first section. As an aid to the assimilation of the material, the author has included many entertaining illustrations and photographs.

The volume appears to be written for the general reader, but the addition of questions and answers and the publisher's advertisement, as well, suggest that it may be intended as an introductory text for nonscience students. For this purpose the book is probably oversimplified, and the amusing style tends to obscure the drama of science. However, the general reader will be handsomely rewarded, for he will find the author to be an illuminating writer on scientific matters as well as a provocative prophet. Says Gamow, "To sum up, we can say that the state of physical sciences today can be compared with the state of geography a few centuries ago: there are no Americas to be discovered any more."

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The Measurement of Colour. W. D. Wright. Macmillan, New York, ed. 2, 1958. ix + 263 pp. Illus. $10.75.

Since 1931, when the Commission International de l'Eclairage (CIE) adopted the Standard Observer System for Colorimetry, color measurement and specification have grown tremendously. Wright's efforts in the development of this system eminently qualify him to write a book on the measurement of color. Although the book treats this specialized field from the psychophysicist's viewpoint, it is written in language that nonspecialists can fully comprehend.

Wright develops the story of tristimulus colorimetry in a logical and informative manner. The first two chapters treat the physical and physiological concepts of visible radiation. The next two chapters present the principles underlying photometry and colorimetry, culminating in the definition of the 1931 CIE standard observer. Chapters 6 and 7 describe the means by which color may be measured (colorimeters and spectrophotometers) and by which colors may be specified and represented (color spacings and color atlases). The final two chapters discuss such important applications of the system as color photography, color printing, and color television and give a behind-the-scenes view of the reasons forcing consideration of revision of the system, ending with the open-minded statement that only the future will show whether the data currently being gathered will "justify a revision of the standard observer data."

There are, regrettably, several prominent inadequacies: nonphysical use of the term *power* to describe "capability"; incomplete captioning of figures for the spectral distribution curves of sources, so that the tyro may draw erroneous conclusions regarding the energy in these sources; and reversal on plate 4 of the bottom and top colors printed to represent effects of decreasing saturation on the spectral reflectance curves of pigments. On the whole, however, Wright has prepared an excellent revision of his earlier work (1944). He does not presume to be an oracle who answers all color-measurement problems, but rather presents the reader a clear insight into the CIE Standard Observer System.

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Proceedings of the Second International Congress of Surface Activity. vol. I, *Gas/Liquid and Liquid/Liquid Interface,* 521 pp., $15; vol. II, *Solid/Gas Interface,* 348 pp., $12.60; vol. III, *Electron Phenomena and Solid/Liquid Interface,* 621 pp., $16.80; vol. IV, *Solid/Liquid Interface (Washings, Etc.) and Cell/Water Interface,* 352 pp., $12.60. J. H. Schulman, Ed. Academic Press, New York; Butterworths, London, 1957. $50 per set.

These four volumes contain the papers presented at the second International Congress of Surface Activity, held in London in the spring of 1957. The amount of material contained in the four volumes is very great and reflects the outstanding success with which the efforts of the organizers (Schulman and his school) have been so justly crowned. The speed with which the work has been published reflects credit on publisher and authors alike, for this is no small achievement.

Since the list of contributors and titles is so long, I feel that to select just a few names would be unjust, but the truly international character of the meeting may be briefly indicated by such names as Ekwall (Finland), Derjaguin and Trapeznikov (U.S.S.R.), de Boer and Overbeek (Holland), Nilsen (Sweden), Sata and Sasaki (Japan), and Alexander (Australia).

The topics of the four main activities of the meeting are conveniently grouped in individual volumes. Volume I deals with general adsorption problems at the gas-liquid and liquid-liquid interfaces, as well as with applications of these studies to typical systems of practical interest—for example, evaporation from water reservoirs, solubilization in detergent solutions, and emulsification. Volume II deals exclusively with adsorption on solid surfaces, one section comprising physical adsorption—particularly with reference to heat of adsorption—and the other section dealing with an interesting variety of problems in chemisorption. Volume III deals with electrical phenomena at the mercury-water and other interfaces, and with such aspects of the solid-liquid interface as flotation and adsorption, while volume IV is concerned with other aspects of the solid-liquid interface, such as problems in detergency, as well as with the surface chemistry of cell and tissue interfaces. The last two volumes illustrate very well the increase which has occurred in recent years in the state of knowledge relating to such apparently diverse phenomena as the flotation of minerals and biological surface chemistry.

These books represent more than simply a collection of (for the most part) admirably brief but well-documented papers dealing with specific items in surface chemistry. Following the excellent precedent set by the Faraday Society, the organizers of the congress allowed time for discussion of the papers, and the keen discussions are reproduced along with the papers. The discussions seem to me to be a valuable feature; they aid the reader in evaluating the occasionally rather strongly worded claims in certain of the papers, and they contribute towards bringing the material into a more coherent whole. Would that more meetings were run along these lines!

Although, to be sure, the many contributions deal with individual items, even the general reader can gain sight of a good cross section of current activity in surface chemistry from these four volumes, and it is heartening to see such breadth of study represented here. Specialists will be more concerned with individual volumes; thus, solution-chemists will find more in volume I than elsewhere, and workers in the field of cata-