with groups and group behavior (drawing upon group dynamics, sociometry, and industrial sociology), and the characteristics and identification of leadership. With these materials as background, the balance of the volume takes up institutions, management and union tactics, the accommodation process, the strike, cooperation, and industrial peace. A wealth of research is reported, but precisely in these areas the individual psychology principles either do not enlighten very much or seem to require undue straining of the facts. For example, in the treatment of management "tactics," it seems to stretch the point to analyze such procedures as job simplification, new machinery, time and motion study, employee testing, and so forth, as devices to afford management "ego gains," surely an incidental benefit if it occurs at all.

Although Stagner does not offer any prescriptions for its attainment, he seems to be, on the whole, optimistic about the possibilities for management-union cooperation and accommodation and industrial peace, which "is not an Utopian dream." All thinking men must agree with him that it can be achieved, however, only if the leadership is intelligent, informed, and mature. Whether these are virtues needed only or primarily by management leaders, as the author seems to imply, or perhaps by leaders on both sides of the table, and in government, is not yet clearly demonstrated. Furthermore, it sometimes seems that the leader and his perceptions may not so much shape the situation as the situation will permit a rise to leadership of the individual whose attitudes and perceptions fit the requirements of the situation.

I believe that Stagner's book is an interesting addition to the literature and worth the reader's time.

WILLIAM G. CAPLES
Inland Steel Company

Fire Research, 1955. H. M. Stationery Office, London, 1956 (order from British Information Services, 20 Rockefeller Plaza, New York 20). 57 pp. Illus. $0.72.

Since 1947, research on fire fighting and fire prevention in the United Kingdom has been carried on jointly by the Department of Scientific and Industrial Research and a committee formed by the insurance societies. The annual reports of the Joint Fire Research Organization provide a detailed and continuing record of the progress of this research. The most recent annual report, that for 1955, includes sections dealing with statistics of outbreaks of fires; fundamental studies of the initiation and growth of fire; results of tests on various fire-extinguishing agents; effect of fire on properties of concrete; structural aspects of fires in buildings; special fire hazards—for example, flammability of fabrics; and tests of fire-fighting equipment. A new committee to advise on research into industrial fires and explosions was set up during the year under review.

The National Academy of Sciences–National Research Council, acting on behalf of the Federal Civil Defense Administration, set up early in 1956 a Committee on Fire Research and a Fire Research Conference. Close liaison is being maintained between the British and the American organizations, and a paper on British fire research is to be read at the forthcoming Research Correlation Conference, organized by the academy.

Behavior Theory and Conditioning. Kenneth W. Spence. Yale University Press, New Haven, Conn., Geoffrey Cumberlege, Oxford University Press, London, 1956. vii + 262 pp. Illus. $4.50.

Spence represents psychology for the first time in the Silliman lectures. For this reason he begins with an essay on historical and modern conceptions of psychology. He traces psychology's struggle to become objective and defends the need for pure science research, even though it requires artificial and nonlife-like conditions of experimentation.

The remaining lectures represent a sample of psychology as science, the subject matter being that of laboratory learning and the method that of quantitative ordering of data in the context of theory. The background comes from the conditioning experiment made familiar by Pavlov and the kind of theoretical construction associated with the name of Clark L. Hull. Although Hull left his mark on a great many psychologists and other behavioral scientists who passed through Yale before his death in 1952, learning theorists look especially to Spence as the man to carry on where Hull left off. Those who were close to Hull and Spence know of their extensive correspondence about theory, and Hull in the prefaces to his major books referred to Spence's influence on his own theorizing.

In these lectures Spence has struck out on his own, acknowledging his indebtedness to Hull, but calling attention, too, to their differences. He has here brought to a head a number of suggestions that have appeared in his work during the past 20 years and has included much new analysis. The main differences in outlook between him and Hull are that Spence does not follow Hull's postulate system and the formal hypothetico-deductive method, he does not see the need for specifying a neurophysiological basis for intervening variables, and he does not commit himself on the mechanism of reinforcement.

Although in all the lectures there is a closely related interaction between data and theory, those already familiar with Hull's system will probably find Spence's treatment of motivation, especially the K factor, both the most novel and the most fertile in suggesting new lines of data gathering. The K factor refers to incentive motivation—how what happens in the goal-box affects what goes on in the next trial on the way to the goal. In rat learning, both the amount of the goal and the time spent in eating affect this subsequent behavior. According to Spence, the action is by way of motivation (K being added to D, the drive factor) rather than by way of an increase in habit strength (H), or by way of a separate process entering into multiplicative relationship with other factors. There are a number of implications systematically followed out by Spence, tested by data from his laboratory.

This is a major contribution, both to theory construction in psychology generally, and to learning theory specifically. It should help scientists from other fields to understand what psychologists are trying to do, and it should help psychologists to move forward toward the solution of their problems.

ERNEST R. HILGARD
Center for Advanced Study in the Behavioral Sciences

The Chemistry of the Coordination Compounds. John C. Bailar, Jr., Ed. Reinhold, New York; Chapman & Hall, London, 1956. 834 pp. Illus. $18.50.

This is a worthy addition to the long and distinguished Monograph Series of the American Chemical Society. Although its editors disclaim an attempt to cover the entire chemistry of coordination compounds in a single volume, a remarkably broad and excellent survey of this huge subject has, nevertheless, been accomplished. When we reflect that most of the elements in the periodic table, barring only the rare gases and some of the alkali metals, are known to enter into complex compounds, the vastness of the undertaking will be appreciated.

The first of the book's 23 chapters (there are 25 contributing authors) outlines the scope of coordination chemistry according to the donor properties of some of the more important ligand atoms: halogens, oxygen, sulfur, nitrogen, phosphorus, arsenic, and carbon. Especially