

in science may have, for good or ill, on the welfare of our own community and of the nations of the world at large. As the Council of the Association does not meet until November, the General Committee, at its final meeting at Cambridge, approved the appointment of a provisional committee, and a few possible members of this committee were suggested to be invited to serve upon it. The publication of a list of the names of these members as forming even a provisional committee is, however, premature and unauthorized.

The Cambridge meeting has been signalized by yet another advance of international importance. The American Association for the Advancement of Science has aims and interests which have much in common with those of the British Association, and it has long been felt that a closer liaison between the two associations would hasten the realization of those ideals of international cooperation and good will and would form a very considerable contribution made by men of science to the cause of world peace.

By a happy chance, the principal officers of the American Association were able to be present at the Cambridge meeting of the British Association, and they have agreed to transmit to their executive two suggestions, which have the full approval of the General Committee of the British Association, for promoting a closer union between the two associations. It is suggested that, in alternate years, a distinguished American man of science should be invited to deliver an address before the members of the British Association at their annual meeting, and reciprocally, in the

years not marked by such lectures, that a distinguished British scientific worker should address the members of the American Association at their summer meeting.

These addresses, which will be devoted to a topic of broad scientific interest, will usually, but not necessarily, deal with some of those aspects of science and society which are the concern of the new Division of the British Association.

Further, the officers of the associations are anxious that the associations, through their members, should have more intimate knowledge, each of the other's work. As a beginning to that end, it is suggested that a number of those actively engaged in the work of either association, as members of council or otherwise, should be elected to membership of the sister association, with the full privileges of attendance at meetings and of reception of journals.

This principle of exchange of the privileges of membership may be greatly extended in the future; but, in this connection much will depend on the form taken by the new quarterly journal which will replace the present annual report of the British Association after the publication of the report of the Cambridge meeting.

The associations are to be warmly congratulated on their courage and initiative in taking these steps, steps which are obviously but the beginnings of others which will lead to greater understanding and closer cooperation, with corresponding repercussions on the friendship between two great democratic communities.—*Nature*.

## BOOKS AND LITERATURE

### NEW TRENDS IN GERMAN FORESTRY

*German Forestry*. By FRANZ HESKE. New Haven: Yale University Press. \$3.00. Pp. 342. 1938.

UNDER ordinary circumstances, a book on German forestry would hardly be of sufficient general interest to be reviewed for scientific readers in America. German forestry has often been interpreted to the American people. Dr. B. E. Fernow at Cornell and Professor Filibert Roth at Ann Arbor were the early leaders in the forestry movement here, and richly contributed to development in this country of the concept of forests as a permanent renewable resource. As a matter of fact, all the early American literature on forestry is based to a large extent on the teachings and text-books of German foresters.

The present book, however, is an outgrowth of entirely changed conditions. It has a peculiar history back of it. For the last four or five years, the Oberlaender Trust and the Carl Schurz Memorial Foundation—the latter symbolic of the days of German liberalism—have sponsored and financed visits to Germany

and Austria of *selected* groups of American lumbermen, governmental forest officials, and individual foresters of prominence. Dr. Franz Heske, a professor at the forest school at Tharandt, has acted as director, guide and "interpreter" on most of these visits. A group of American lumbermen, after one of these trips, thought to present their impressions in the form of a book for the benefit of forest owners and foresters in this country. They have not carried out this plan, but Dr. Heske, who had previously visited the United States under the auspices of the Oberlaender Trust, has undertaken, on their behalf, to interpret present German forest policies to the American public.

This interpretation, originally written in German, has been translated into English by Professor A. B. Reeknagel, of Cornell University, edited by W. N. Sparhawk, of the U. S. Forest Service, prefaced by Henry S. Graves, dean of the School of Forestry in Yale University, and supplied with an introduction by R. B. Goodman, a forest land owner. The result

is a superbly printed and illustrated book of some 340 pages, devoted in part to the historic, technical and economic aspects of German forests and forestry and in part to a discussion of German forest policies.

The statistical and technical discussion, which has been summarized clearly and in a masterly fashion, is not new, except for the strong defense by Dr. Heske of private ownership of forests—a defense which colors the entire book—and the stock argument implied as to Germany's need for greater natural resources.

Dr. Heske's views on private forestry are in striking contrast with those of the older generation of German foresters. They may be gleaned from a few direct quotations:

State forest ownership through "complete elimination of individual striving for profits and of the attendant exertion of the highest efficiency and initiative threatens to produce a schematic and uniform technique and a bureaucracy" (p. 107).

"Socialization [of forests] . . . is usually directed mainly against the larger private holdings, many of which are well managed. On the contrary, for tactical and political reasons it exempts the small private holdings, the management of which leaves much or everything to be desired" (p. 108).

This immediately brings up the vision of the huge areas of devastated forest land of our own large timber owners and the still-persisting small farm woods which, in increasing amounts, are contributing raw materials to our forest industries.

And again, socialization "breaks the natural ties that bind creative individuals to their work and which form *the basis of all culture and ethics*.<sup>1</sup> With the breaking of these ties . . . a people finally sinks to the level of lazy usufructuaries" (p. 108).

Dr. Heske, however, is not altogether for totally unrestricted private ownership of forests. What he advocates is a "socially oriented" private economy "that will advance the interests of society through the highest development of personal individuality and initiative" (p. 105). Such a condition, according to him, obtains in the case of *entailed* private forests, the legal peculiarities of which consist in "the prohibition of the sale of the property, the obligation to maintain its substance unimpaired, the prohibition against division by inheritance. . . . The incumbent proprietor has possession, control, and the usufruct. The income from the property is his to dispose of. The substance may not be touched by him or impaired by neglectful management. For the forest this means the fundamental requirement of strictly sustained-yield management" (p. 102). Such entailed forests, according to the author, are "models of forest management" and best serve the social needs of the community. What

<sup>1</sup> The italics are those of the reviewer.

this means in actual practice is the preservation of the large ancestral estates and the extension of the same "entail principle" to medium-sized farmer estates. The hereditary farmstead law of 1933 seeks to accomplish this by perpetuating the ownership in such land without curbing "individual striving for profits."

It is, however, the discussion of forest policies that holds the greatest interest. There are certain goals which are accepted as desirable and essential in either a democratic or a totalitarian state; in forestry, for instance, land management on a permanent basis, stability of ownership of properties as an essential condition to such management, creation of opportunities for employment with attendant stabilization of rural communities, etc. The method, however, by which such goals may be attained depends on the social objectives of the governing class. In the one case, these goals are attained by taking into account the needs of the masses, with the benefits accruing to society as a whole. In the other, the tendency is to benefit a small minority, the large landowners, thus impoverishing the masses and enslaving the workers. All such measures must be considered in connection with the social effects which ultimately determine their real value. Foresters who are interested only in conservation of forests, as such, may fall for Dr. Heske's arguments and overlook their social implications.

Forestry in Germany is the outgrowth of a long historic development, in which density of population, scarcity of natural resources and survival of remnants of the feudal system have played their part. It is true that forests are managed as a continuous crop and provide definite employment to the villages, thereby contributing to their permanent existence. The contrast, however, between the squalor and pitiful income of the villagers and the "abundant life" of their landlords, strikingly emphasizes the *undemocratic* basis of this relationship. The new régime, with its policy of retaining the large landlords in full possession of their ancestral estates and privileges, its insistence on private ownership of the natural resources, its rigid fixity of occupation, fixity of residence and fixity of remuneration of the rural worker, marks a return in land use to the feudal system in its modern version—monopoly capitalism.

Yet Dr. Heske asserts that this is the only way out of "the liberal capitalistic economy of the 19th century, with its *laissez faire* philosophy, [which] has been followed by a demand for the extreme measures of a schematic State-controlled economy" (p. 104). This way out has involved the abolition of trade unions, the prohibition of collective bargaining and the breaking-up of all resistance on the part of the workers. For these safeguards, abstract concepts of "individual enterprise as a social organism" and the principle of

leadership and confidential councils have been substituted. These are nothing but new social instruments for old ends, namely, the destruction of democracy.

The author frankly admits that the principle of leadership means that "all power to make decisions resides in the leader of the enterprise—the employer." In forest enterprises "the leader will be either the forest owner or the forest officer" (pp. 226 and 227). He also claims that the social interests of the worker have always been fairly well safeguarded in German sustained-yield forest enterprise, omitting to mention that the women and children are forced to work in the forests because the head of the family is unable to earn a living wage. He further fails to mention that since the advent of the NSDAP the rural and forest workers have been deprived of almost all freedom of movement, and have been subjected to the competition of unemployed from the cities. The "bounden duty" of such workers, riveted to the land, is to do whatever their self-appointed "leaders" tell them to do. The bucolic paradise which Dr. Heske holds out as the ideal for us to emulate is thus nothing more than chattel slavery and feudal serfdom.

How well the "leader principle" has worked out may be gained from the fact that in the woods industry, for instance, the average hourly rate of wages for skilled labor, male and female, has dropped from 111.2 Reichspfennigs in 1931 to 79.3 Reichspfennigs in 1936. For unskilled labor, it has been reduced from 91.3 Reichspfennigs in 1931 to 62.0 Reichspfennigs in 1936. (These figures are quoted from the National Industrial Conference Board's report "Economic Development of Germany under National Socialism." Study No. 236, pp. 33-60. New York, N. Y.). Truly, "the concept of the new labor law finds a ready soil in German forest enterprises" (p. 230). It is, therefore, somewhat understandable why American forest owners would be interested in having this interpretation of German forest conditions made available to American foresters. Why foresters, some of them high

in the public service, should be active participants in helping to indoctrinate our forestry profession with this new ideology is much more difficult to understand or to explain.

There is one peculiar deviation from the general spirit of the book. This is the discussion of the "freedom of science," almost passionate in tone, which leaves much to the imagination and conjecture of the reader. "An important, yes, an almost sacred fundamental characteristic of science, including forestry science," says Dr. Heske, "is freedom. Without freedom, science becomes a farce." And again, "The discovery of truth requires that science be absolutely free from compulsion and tutelage, for the ways of science are determined only by the search for truth, and must be neither anticipated nor influenced from without." And so on for two and one-half pages (pp. 205-207), without a single reference to the status of science in Germany.

This discussion is sandwiched in between a rather glowing account of the status and scope of forestry science and one of forest research in Germany. It is followed by a chapter on forest education, in which the author points out Germany's advantages as a center for forest education for foreign students.

A few pages later, he states, "Thus far, the fear that the forestry authorities would cramp the professors engaged in directing research with troublesome instructions and thereby encroach upon the freedom of research has proved groundless." The implication, therefore, is that science in Germany is free and that the admonition to be "on guard to keep the endeavors of science free from partisan influences" is really meant only for us. Or may it not be a spontaneous outcry of a tortured scientist's soul (shade of Freud) protesting against making all science in Germany the handmaiden of inspired truth!

RAPHAEL ZON

UNIVERSITY FARM,  
ST. PAUL, MINN.

## SPECIAL ARTICLES

### THE CAPSULAR POLYSACCHARIDE OF THE TYPE XIV PNEUMOCOCCUS AND ITS RELATIONSHIP TO THE SPECIFIC SUBSTANCES OF HUMAN BLOOD

RECENTLY in this journal, Finland and Curnen<sup>1</sup> have called attention to a number of untoward clinical reactions manifested by hemoglobinuria, and even death, following the intravenous administration of Type XIV antipneumococcal horse serum. Examination of 19 different specimens of horse sera of this type revealed in every instance agglutinins for human erythrocytes in high titer, whereas only two of 41 specimens of sera

<sup>1</sup> M. Finland and E. C. Curnen, *SCIENCE*, 87: 417, 1938.

of other types agglutinated human red blood cells in dilution of 1:20 or higher. This distinction is not shared by Type XIV rabbit serum.

Since the phenomenon of erythrocyte agglutination is peculiar to Type XIV antipneumococcal horse serum it was thought that an investigation of the properties of the capsular polysaccharide of the Type XIV pneumococcus might reveal points of similarity with the blood group specific substances, and at the same time shed light upon the mechanism, whereby antipneumococcal horse serum of this particular type agglutinates human erythrocytes.

Two possible explanations for the observed effects