

as the methods adopted were the principal topic of Mr. Udny Yule's recent presidential address to the Royal Statistical Society, it is scarcely necessary to say that Prof. Pearl's treatment of the problem is interesting and valuable.

Although the arrangement of the book is not strictly chronological, the memoir on brain-weight and the studies of influenza are nearly twenty years apart.

There will certainly be some to shake their heads and regret that Prof. Pearl did not continue in the admirable course of his earlier youth. The memoir on brain-weights is a finished piece of work; the author is familiar with the relevant literature, he has shown good judgment in his choice of data, and has reduced those data in the best way; the problem he essayed to solve he has solved. The studies of influenza, on the other hand, are incomplete; statistical indices of dubious import are employed, alternative explanations of particular results are not fully considered, and all the relevant data are not examined. The author has wandered from the path of biometric rectitude. Such might be the judgment of a "safe" man. But there will never be any shortage of "safe" men, whether in subsidised laboratories or suburban railway carriages. There will always be plenty of people terrorised by specialists and afraid to venture into a field without the landlord's written permission. It is well that Prof. Pearl has courage, and will not be deterred by the criticisms of any of the twelve groups invoked by his publishers from still more flagrant trespasses than are recorded in the present volume. In twenty years' time, in his next volume of collected writings, he will no doubt modify some opinions he now holds. Only very stupid people are always right. M. G.

Our Bookshelf.

Untersuchungen über Triphenylmethanfarbstoffe Hydrazine und Indole. Von Emil Fischer. Herausgegeben von M. Bergmann. (Emil Fischer: Gesammelte Werke.) Pp. ix+880. (Berlin: Julius Springer, 1924.) 9.30 dollars.

THE volumes of Emil Fischer's papers, already reprinted in this series, cover the great groups of natural substances with the investigation of which his name is specially connected—carbohydrates and ferments; amino-acids, polypeptides and proteins, depsides and tannins, and purines. The reprinting of the papers was begun by Fischer himself in 1906, and since his death it has been continued by his friend and collaborator, Dr. M. Bergmann.

The volume now under notice is the penultimate of the series, but chronologically it comes first as it contains Fischer's earliest work, beginning with his inaugural dissertation on fluorescein and phthalein-orscin, presented at Erlangen in 1874. Though this deals with synthetic substances it already reveals Fischer's bent of mind towards research on natural products, since it

starts by pointing out that, from the beginning of organic chemistry, the minds of chemists have hankered after the investigation of the colouring matters of plants and animals, partly because their industrial applications made them accessible, but more because a knowledge of their chemistry might throw much light on their origin and their relation to the organisms producing them. This thesis was the first of seventeen papers on triphenylmethane dyes, which Fischer published between 1874 and 1904, chiefly with Otto Fischer as collaborator. It was characteristic of him that he was able to keep more than one series of difficult researches going at one time, and while the triphenylmethane work was in progress he began the investigation of aromatic hydrazines in 1875, a research which led to the preparation of phenylhydrazine and thus provided him with the tool which he used to such advantage later on in the investigation of the soluble carbohydrates.

The work on hydrazines led in another direction to the synthesis of indoles, a reaction that is still being discussed and is still bearing fruit and, in view of the increasing realisation of the importance of the indole nucleus in complex biological products, may in the long run prove to be as important as any that even Fischer discovered. Chemists everywhere will be grateful for the care with which these volumes have been prepared by the editor and issued by the publishers. T. A. H.

The Protection of Birds: an Indictment. By Lewis R. W. Loyd. Pp. vii+88. (London: Longmans, Green and Co., 1924.) 3s. 6d. net.

MR. LOYD'S main indictment of the present system of bird protection is its indiscriminate nature, whereby it is sought to protect all sorts and conditions of birds against the hand of man, without due regard to the effect on bird life as a whole. He points out forcibly and with a great measure of truth that indiscriminate protection may, and often does, lead to the overabundance of hardy, virile species at the expense of less adaptable kinds. As an example of this, he suggests that one result of the wholesale protection afforded to the birds of Lundy will be the gradual extermination of kittiwakes, guillemots, razorbills, and puffins by the herring gulls, which feed on their eggs and young. In the same way, he affirms that peregrines and jackdaws have accounted for the chough in its former haunts, the great skua for the wimbrel on the Orkneys and Shetlands, and gulls for the tern colonies on the Farne Islands. The author further argues that natural causes, such as floods and shortage of food, and necessary artificial causes, such as lighthouses, are responsible for more wholesale loss among birds than anything that man can accomplish, and suggests that overprotection among vigorous species may, by bringing about overcrowding and consequent epidemic, cause that very destruction which it is designed to avoid.

Mr. Loyd would apparently withdraw protection from such birds as herring gulls, starlings, sparrows, rooks, jackdaws, and little owls, in order that the other birds on which they prey in one way or another may be given a chance to survive. His denunciation of the introduction of the little owl will commend itself to others besides ornithologists. Mr. Loyd takes the opportunity to defend the collector against the calumnies levelled against him by such writers as Hudson and by the Royal Society for the Protection of Birds, and