

### The Rat Menace.

*Rats and How to Destroy Them; dealing with Rats in a House, Shop, Warehouse, Outbuilding, Yard, Stable, Cow-house, Fowl-house, Pig-sty, Garden, Greenhouse, or Vinery; by a River, Stream, or Ornamental Water; on a Ship, Shooting Estate, or Farm; and in Sewers.* By Mark Hovell. Pp. xlii + 465. (London: J. Bale, Sons and Danielsson, Ltd., 1924.) 10s. 6d. net.

IT has been estimated that the damage caused by rats to the food supply and buildings in Great Britain alone represents a loss of something approaching 50 million pounds a year. In addition to this, the rat is a serious menace to society as a carrier of disease; the occurrence of infectious jaundice in epidemic form on the western front during the War and more recently in Scotland, where a mortality of 40 per cent. of cases occurred, has directed attention to a new danger near home, for which the rat is responsible. It is common knowledge that rats are prolific, but few people realise the rapidity with which their numbers increase. The litter in an adult rat varies from 8 to 16. Rats breed throughout the year, the period of gestation is only 21 days, and impregnation may again take place within a few hours of the birth of a litter.

A very moderate estimate of the number of descendants of one pair of rats born during one year is well over a thousand, and these in the course of three years will have increased to a quarter of a million; these calculations are based on litters of 10, and only 6 litters in the course of a year are allowed for. A single pair of rats will eat more than 80 quartern loaves or their equivalent in a year, and their descendants in the same year will eat more than 46,000 loaves or their equivalent in wheat or flour.

After reading the introductory chapter of Dr. Hovell's book in which these and many other interesting facts are lucidly presented, one cannot remain apathetic to this ever-increasing menace to humanity. The remainder of his book deals chiefly with all the known methods of preventing the spread of rats and destroying them in every conceivable situation. Traps of every description are described, with many illustrations, and the relative values of all the better known forms of rat poison are dealt with. A very interesting chapter is devoted to the history of bubonic plague, and the way in which it is carried by the various rat fleas. It is interesting to note that, even in Old Testament times, rats were in some way held responsible for the spread of plague, continual reference being made to "golden mice" which were made "as an offering for the Plague."

There is a short section on rat cancer and the life history of the nematode (*Spiroptera neoplastica*) which

causes this disease in the stomach of the rat and passes its larval stages in the muscles of a species of cockroach. In this and in his remarks as to the possible relation of human cancer to cockroaches, the author is perhaps a little misleading, as he does not state that the cockroach in question is the New World cockroach *Periplaneta americana*, and not *Blatta orientalis*, which is the one common in Europe.

There is an appendix dealing with a scheme for the organised destruction of rats throughout the country, but though this would seem to be a highly desirable step, it would require special legislation to enforce.

The book is one which will direct public attention to a very real menace and at the same time be of the greatest assistance to those who are brought into direct conflict with that menace.

### Our Bookshelf.

*Masters of Science and Invention.* By Floyd L. Darrow. Pp. v + 350 + 24 plates. (London: Chapman and Hall, Ltd., n.d.) 10s. 6d. net.

IN recent years progressive science teachers have been pondering the problem of "humanising" scientific instruction, of introducing the breath of life into the "valley of dry bones" of experiment, observation, and inference, and thus in a measure treading on the ground hitherto monopolised by the humanists. The work under notice represents an attempt in this direction. The author has set himself the difficult task of giving, in simple biographical form, an account of the development of scientific achievement, and he states that "no knowledge of the laws of science and their manifold applications is even approximately complete without acquaintance with the outstanding figures who have made possible the age in which we live." In the twenty-eight chapters, each of which is more or less complete in itself, we are given an excellent bird's-eye view of the march of discovery and invention, which will especially appeal to the young—in years or knowledge.

Although we may question if biography is essential to the understanding of the content and method of science, there can be no doubt that its inclusion is a most valuable stimulus, particularly to that large majority which prefers the study of man to the study of Nature. This book is a very useful addition to popular scientific literature; the arrangement is good, the style is clear and vivid (but why, oh why, does the author never use a colon or a semicolon?), the selection of "masters"—an invidious task—is good, and the statements are generally accurate. Two errors in the chapter devoted to briefer biographies should be corrected: Sir Ernest Rutherford is no longer professor of physics at Montreal, and the late Sir William Crookes was never a professor either in the Royal College of Science, Oxford, or elsewhere.

An analysis of the nationalities of the men who are noted at length in this volume may be of interest. Of the men of science, about one-third are British, one-fifth French, one-sixth German, one-fifteenth each