club" or to try to impugn or belittle the motives of the men. If *any one* has anything to contribute—of knowledge or ideals or funds—that will make our museums more interesting and more effective educationally, he would certainly be welcomed on any board.

And how the money has poured in! Millions of dollars freely contributed solely for the public welfare. The City of New York has never, if we are correctly informed, appropriated a penny for the purchase of any of the marvelous collections of objects of art and natural science on display every day of the year, in every city museum, free at all times to all visitors. The city provides the sites, buildings and maintenance—heat, light, upkeep of buildings and grounds as it properly should. In some cases it meets a portion of the cost of curatorial services, in some cases none. The exhibits are provided from private funds.

We sometimes wonder how many of the millions who visit these great public institutions every year ever stop to consider that they are indebted to some one for making such opportunities possible or who that "some one" is. It is high time that these facts were generally known and appreciated.

No sane person would, for a moment, contend that our museums, our botanical gardens, our zoos are perfect. The church is not perfect, banking is not perfect, business is not perfect, our schools and colleges are not perfect; they are all human institutions, and nothing human is perfect. But the fact remains that the American Museum of Natural History and the Metropolitan Museum of Art, not to mention the other institutions, are recognized by competent authorities, both here and abroad, as among the greatest and most effective institutions of their kind in the world. There is every evidence that the local public (the taxpayers) and out-of-town visitors are unanimous in this verdict.

It is the dual function of a museum to advance knowledge as well as to disseminate it. It would be wholly out of the range of possibilities to produce such an exhibit as, for example, the dinosaur hall in the Natural History Museum without a staff of creative scientists. The material could not be collected and installed merely by "popularizers." It must be authoritative or it would be worse than useless. Creation in science means research. It is distinctly not the purpose of museums to be merely purveyors of second-hand information. And every year their emphasis is more and more on popularization and public service while maintaining the highest standards of science and art.

Moreover, it should be kept in mind that our museums are not *exclusively* for "the average roughneck outside," as Mr. Moses seems to imply. While they do not discharge their full function "if a comparatively few really cultivated people understand and visit them," nevertheless it is an important part of their obligation to serve the "comparatively few really cultivated people"; they certainly pay their share of the taxes. Educational standards are not raised by adjusting them to the mediocre, in museums any more than in colleges. It is the perpetual challenge of education to elevate the general intelligence, if possible.

Like the mayor and the comptroller, the park commissioner is *ex officio* a member of the board of every one of these semi-public institutions that is located on city-owned property. His status as such is no different from that of any other member of the board. He has not only the honor but the obligations and duties of a board member. If he sees opportunities to improve the museums the most direct and effective way to bring that about would be to attend a board meeting in person, outline the changes or innovations he thinks desirable, and have them freely discussed. He may rest assured that if such proposals are commendable and feasible they would be gladly adopted, not only by New York City museums, but by those in other cities as well.

MUSAEUS

THE ECR IS PROGRESSING

SINCE the notice of January 17 appeared in SCIENCE concerning the proposed Encyclopedia of Chemical Reactions more than fifty persons have volunteered to aid in the abstracting of the remaining chemical journals for the work. This response has been far beyond expectations.

In making a progress report I wish to state that at this time (February 22) there are 69 listed collaborators and abstractors for the ECR. In addition to these there are 18 volunteers who have not yet been given abstracting assignments, raising the total ECR personnel to 87. There are 147 chemical journals on our revised list to be covered. This list now contains all the journals that are likely to yield any inorganic chemical reactions in the modern sense. Out of this number forty-one journals have already been abstracted, and the reaction cards filed. Forty-three others have so far been assigned to abstractors, and are now being worked over.

If the 18 unassigned volunteers will each take one of the remaining journals we should still have 45 left, for which other abstractors will be needed. The journals yielding numerous reactions suitable for the ECR are comparatively few, but some of them are so long that it will require half a dozen or more abstractors for each set, in order not to make the work too tedious. On the other hand, some journals in related fields yield

no reactions, or very few, but nevertheless they should be looked over.

In the revised list of journals the abstractor's number, to whom the journal has been assigned, follows the name, and two check marks indicate that the journal has been finished. This list, together with abstracting rules, will be sent to any one else desiring to have a part in this worth-while undertaking.

C. A. JACOBSON,
Editor in Chief

WEST VIRGINIA UNIVERSITY

PIGEON MALARIA IN CALIFORNIA

FOR many years, the presence of a sporozoan malarial parasite in pigeon blood has been known to produce a disease of economic importance. The causative organism of pigeon malaria is *Haemoproteus columbae* Celli and San Felice. The parasite can be transmitted from bird to bird only by means of a blood-sucking vector, a hippoboscid fly, *Pseudolynchia canariensis* (Macq.). Bishopp[1] states that this fly was introduced into the United States about 1896. It is distributed throughout the southern states and in California.

Although pigeon malaria has been reported from many parts of the United States, to our knowledge, no previous record exists which establishes its presence in California. Our interest was aroused when a report came to us from a Southern California squab farm that birds infested with *P. canariensis* showed signs of unthriftiness. The symptoms were quite variable in intensity, ranging from mild to severely morbid states. Examination of blood samples from these birds showed the erythrocytes to be parasitized by *H. columbae*.

The extent of the disease in California has not been determined. A survey is in progress with this object in view. The presence of the parasite should stimulate the application of vigorous control measures against the fly vector.

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SPECIFICITY OF RENIN

UNDER date of Friday, December 13, there appeared in SCIENCE, page 554, a note from the University of Buenos Aires relative to the absence of pressor response in man when swine renin is injected intravenously. In this connection we have the following to report.

Since February, 1940, we have experimented with hog renin in humans, the material employed having been prepared especially for us by Professor W. W. Swingle, of Princeton University, who reported that 0.1 mg per kilo of body weight of this material, given intravenously to anesthetized dogs over a period of two to five seconds, raised the mean arterial pressure 40 mm of mercury. We have thus far failed to obtain any significant elevation in blood pressure response in human beings with this material even when injecting intravenously quantities of renin, which appear relatively large. After cautiously experimenting with the material on ourselves, a group of 20 patients on Dr. Schnabel's service were tested for sensitivity by the intradermal injection. In two instances mild positive skin tests were obtained. On March 6, 1.76 mg of renin were injected intravenously into a patient, with no significant effect on blood pressure. The following day 2.9 mg were injected, with negative results. Since then we have injected this material in normal individuals and in patients suffering with hypertension in gradually increasing doses. Our last experiment was with a 38-year-old male, who was given rapidly 7 mg intravenously, without effect on blood pressure. Five minutes thereafter 14 additional mg were given intravenously, still without effect on the blood pressure.

It might be of interest also to state that a large injection in a patient who earlier had demonstrated a positive skin reaction, had no effect upon the patient's blood pressure.

DAVID TURNOFF
L. G. ROWNTREE

PHILADELPHIA INSTITUTE FOR
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SCIENTIFIC BOOKS

MATHEMATICS

The Development of Mathematics. By E. T. BELL. xi + 583 pp. New York: McGraw-Hill Book Co. 1940.

"ONCE we venture beyond the rudiments," says Mr. Bell, "we may agree that those who cultivate mathematics have more interesting things to say about it than those who merely venerate." No more eloquent substantiation of this assertion could be wished for than this book in which it appears. A cultivator himself, its author requires no introduction to mathematicians. He knows mathematical creation—its trials and its rewards—at first hand. Nor does he need introduction to the wider reading public. It seems to this reviewer, however, that in this work he has risen to a new level of accomplishment, which merits the genuine appreciation of all those who regard mathematics and its related sciences as a vital field of human activity, and find interest in the history of their development. This is an eminently readable book, written in an engaging and graceful style. At the same time it is a scholarly work with a wholly serious purpose,

[1] F. C. Bishopp, *Jour. Econ. Ent.*, 22: 974, 1929.