Toronto. Finally, William E. Ritter gives the "Significant Results of a Decade's Study of the Tunicata." This is a most interesting paper, one of the kind that the student or "all around" naturalist appreciates, giving, as it does, in a concise form and clear language the results, and the bearing, of the observations made on this group of animals during the past ten years.

The Zoological Society Bulletin for July is an interesting number and records many important facts. First it notes the arrival of a pair of the Sudan African Elephants, *Elephas oxyotis,* the species with huge ears, and the one that attains the greatest size. The lamented Jumbo was a fine example of this species. "An Important Educational Collection" is contained in the Small Mammal House comprising examples of six orders of mammals to which it is hoped to add examples of three other orders (Pinnipedia will hardly rank as more than a Suborder). For teaching the rudiments of the classification of mammals this collection is most important, the more that it is well labeled, and the labeling at the Zoological Park is of the highest order, as instanced by the labels in the Reptile House. The ground in the north end of Baird Court has been laid out in a beautiful Italian garden and a new walk laid out through the fine beech woods by the beaver pond. Many species of birds living in the park have nested, including the rare Trumpeter Swan. Eighteen species of our warblers are now to be seen in the bird house, a most unusual number to be in captivity.

The Journal of Comparative Neurology and Psychology for July includes a paper by C. Judson Herrick on "The Tactile Centers in the Spinal Cord and Brain of the Sea Robin, *Prionotus carolinus,*" giving data hitherto unpublished upon which the author relied in part in his analysis of tactile and gustatory connections in fishes. The "accessory lobes" of the spinal cord of the gurnards are adapted for short reflexes, chiefly confined to the segment involved and not affecting greatly distant parts of the central nervous system. The second paper is "An Experimental Study of an unusual Type of Reaction in a Dog," by G. van T. Hamilton. The animal was trained in a complicated experiment box to determine the limits of complexity in association possible to the dog. James Rollin Slonaker reports on "The Normal Activity of the White Rat at Different Ages," recording by means of a kymograph record made by a revolving cage the total spontaneous activity of the rats from day to day.

DISCUSSION AND CORRESPONDENCE

STÖHR'S TEXT-BOOK OF HISTOLOGY

To the Editor of Science: My edition of Stöhr's "Histology," reviewed in Science, July 26, has been the subject of some misunderstanding. The publishers of the previous American editions obtained Professor Stöhr's permission to make additions and changes in the book, provided that a preface disclaiming his responsibility for such changes should be inserted. Several text-books written on essentially the same plan were then available for American students, namely Huber's excellent version of Böhm and Davidoff; MacCallum's edition of Szymonowicz which presents fully certain American researches; Schäfer's brief but instructive Essentials; Ferguson's Histology illustrated by photomicrographs; Bailey's, and others, each with peculiar and desirable features. There was, however, no book which presented histology from a strictly embryological point of view, describing the development of an organ as an introduction to its adult structure. Since this treatment was considered both scientifically and pedagogically practicable, and since its use at the Harvard Medical School was hampered by the lack of a text-book, the editor accepted the offer of Messrs. P. Blakiston's Son & Company to rearrange Professor Stöhr's book upon this plan. The editor had no desire to work over again and to illustrate anew the familiar facts of histology, which were so well presented in several available books, notably in that of Professor Stöhr. The resulting volume has been used with gratifying success in the elementary course at the Harvard Medical School. There are de-

fects in illustrations and in statements (such as that which eliminates Paneth's cells from the duodenum), but the feature of this edition is its embryological treatment.

Professor Stöhr believes that histogenesis is too imperfectly known to be included in a text-book of histology, and that morphogenesis is there out of place. Such figures and embryological accounts as I have included he draws and presents in lectures on systematic anatomy. The reviewer in SCIENCE, however, believes that the idea of embryological arrangement is excellent, but that it has not been properly carried out. Thus he notes that the formation of the germ layers is not described in human embryos, although he does not state that human material is not yet available. If the chick and pig are referred to when similar human embryos have been described, it is because the student uses the former in the laboratory.

Another criticism is the failure to recognize American investigators, who are seldom referred to by name, and who, it is said, are "ignored" or "apparently unknown." Many of the papers cited, as those of Bardeen, MacCallum, Hendrickson, Calvert, Bensley, Opie, and Flint were re-read by the editor immediately before writing the corresponding sections of the book. It has been Professor Stöhr's practice to omit personal references, which he believes are out of place in an elementary histology. To do justice the book should teem with such references. The considerable number which I have introduced refer to very recent, or to important controverted work. A student should always have access to the memoirs, but whether or not they should be listed in an elementary text-book is questionable. Since the reviewer in SCIENCE believes that acknowledgment should always be made, it seems unjust to him that Professor Stöhr should have modified his diagrams of the spleen and lung after the appearance of Professor Mall's and Professor Miller's work, respectively, without recording his acknowledgments. I am informed that Professor Stöhr some time ago wrote to the publishers that he had examined Dr. Miller's papers and used them as far as they seemed right to him, and that the diagram was mostly drawn according to Miller.

Some microscopic discoveries may be readily verified. Such was Professor Sabin's finding of the jugular lymph sac in mammals, so obvious a structure that I have a drawing of it made by a student some years before her paper explained its nature. In the text-book this sac is described but its discoverer is not recorded. Other findings, like those of the splenic lobules and units and of the atria of the lung may perhaps be verified after careful study by special methods. If neither the author nor the editor of the book is sure that he can identify the atria, he can not honestly describe them.

Professor Mall's researches on connective tissue which are thought by the reviewer to have received insufficient attention, are referred to on pages 39, 42 and 50 with accompanying figures. Altogether it is quite probable that German work is less fairly treated than American in this text-book, but the national element was not and should not be considered.

This edition of Stöhr's "Histology" was written to assist teachers in using the embryological method of presenting the subject. It is hoped that any teacher who is interested in such a method will examine the book.

FREDERIC T. LEWIS

CAMBRIDGE, MASS.,
July 27, 1907

SEISMOTECTONIC LINES AND LINEAMENTS—A REJOINDER

IN the issue of SCIENCE for July 19, 1907 (pp. 90–93), Professor William M. Davis has reviewed my recent paper, "On Some Principles of Seismic Geology," published in Gerland's "Beiträge zur Geophysik" in March last (vol. 8, pp. 219–292). To his statement that "the seismotectonic lines seem, so far as earthquakes are concerned, to be largely influenced in location and direction by the evidently subjective element of the location of cities and villages in which observers are numerous," I would say, that some modifica-