any characters by which they can be distinguished from their next of kin. The differences are merely comparative and often intangible, and the author kindly warns his readers that they can not hope to satisfactorily discriminate between them; and that when certain groups 'are critically studied as a whole,' as in the case of *Thomomys,* a considerable number of them 'will probably be dropped.' Under coyotes, of which three *species* are credited to California, he says: "Little harm would be done if all the California coyotes were grouped together under the name [*Canis*] *ochropus.* * * * Those not experts will find it difficult to determine the species of coyotes."

Following the main text is a chapter on 'Life Areas in California' (pp. 283–291), illustrated with a map, on which are indicated the seventeen faunal divisions the author has found it desirable to recognize. This is followed by a 'List of California Mammals and their Faunal Distribution,' which is noted by means of references to the map. A glossary and a very full index (40 pages) close the volume. J. A. ALLEN.

Physiology of the Nervous System. By J. P. MORAT, of the University of Lyons. Authorized English edition, translated and edited by H. W. SYERS, M.A., M.D. (Cantab.), Physician to the Great Northern Central Hospital. With 263 illustrations (66 in colors). Chicago, W. T. Keener & Co. 1906. Pp. xxviii + 680.

This work, a portion of the 'Treatise on Physiology' by Professors Morat and Doyon, is a full and systematic exposition of the physiology of the nervous system. The subject has been treated with great clearness and conciseness. The elementary nervous functions, including the anatomy and functions of the neuron in general, the methods of using electricity in the study of nerve actions and the effects of nerve poisons, are discussed in the first part. The individuality of the neuron is brought out as the essential point in the theory of the nervous element without entering into a technical discussion on the *continuity* or the *contiguity* of the articulated prolongations of these neurons. With reference to the question of nervous amœbism, as with other mooted points which at the present time only lead to fruitless discussion, the author takes a neutral stand. The laws of Waller, in modified form, are described in a clear manner. The views of Bethe, opposed to the Wallerian idea of the regeneration of the peripheral stump of the severed nerve, are not discussed, perhaps, to the advantage of the lucid presentation of the general laws of nerve degeneration. Death by electricity is discussed in the light of recent experiments on animals and of accidents arising in industrial applications of high-tension electrical currents.

The systematic functions, *i. e.,* the functions which originate in the associations and definite relationships which are established between the cellular functions, are discussed in the second part of this work. The relationships of sensation and motion are defined very concisely. In introducing this important chapter the author tersely says:

> Except for the infinitesimal part which each one of us plays therein a knowledge of the living world is based on anthropomorphic reasoning, and it is impossible to base it on any other reasoning. Hence it is necessary to exert great prudence in employing it.

This part contains sub-chapters on the metamerism of the spinal nerves; and their functions, and the fundamental determinations of the cranial nerves. The pneumogastric and trigeminal nerves are very thoroughly treated. The chorda tympani is regarded, together with the two superficial petrosal nerves, as the principal continuation of the nerve of Wrisberg (nervus intermedius). In the second chapter the reflexes, conscious, sub-conscious and unconscious, are classified and described extensively. The author avoids attempting to explain the mechanism of inhibition, but indicates by comparisons how this phenomenon belongs to the category of explicable facts of which the explanation itself is wanting.

The most noteworthy and interesting por-

tion of the work treats of the superior systematizations of the brain, comprising visual, auditory, tactile, olfactory and gustatory innervations. The chapter on language and ideation, together with the cerebral localizations of language and of the aphasias is particularly noteworthy. The phenomena of sleep, hypnotism, dissociations of personality, spiritualism and other topics belonging to the borderland between physiology and psychology are briefly defined in terms of physiological functions.

The work embodies the latest real advances in our knowledge of the nervous system without being burdened by superfluous references to trivial points of controversy. Each chapter is followed by a fairly extensive classified bibliography and the translator's work is practically faultless. The illustrations have been selected with care and are neither too few nor too many in number. The work will surely commend itself to both the physiologist and the practical neurologist.

Edw. Anthony Spitzka.

SCIENTIFIC JOURNALS AND ARTICLES.

The July number (volume 7, number 3) of the *Transactions of the American Mathematical Society* contains the following papers:

M. Mason: 'On the boundary value problems of linear ordinary differential equations of second order.'

M. W. Haskell: 'The resolution of any collineation into perspective reflections.'

L. E. Dickson: 'Linear algebras in which division is always uniquely possible.'

J. E. Wright: 'Correspondences and the theory of groups.'

E. Kasner: 'The trajectories of dynamics.'

R. Morris: 'On the automorphic functions of the group $(0, 3; l_1, l_2, l_3)$.'

R. G. D. Richardson: 'Improper multiple integrals.'

The opening (October) number of volume 13 of the *Bulletin of the American Mathematical Society* contains the following articles: 'Criteria for the Irreducibility of Functions in a Finite Field,' by L. E. Dickson; 'On the Theory of Equations in a Modular Field,' by L. E. Dickson; 'Notes on the Variation of the Definite Integral,' by N. J. Lennes; 'A Note on Transitive Groups,' by W. A. Manning; 'Differential Geometry of n Dimensional Space' (Review of Guichard's Systèmes triplement indéterminés et Systèmes triple-orthogonaux), by L. P. Eisenhart; Shorter Notices (Macfarlane's Bibliography of Quaternions and Allied Systems of Mathematics, by H. E. Hawkes; Echol's Elementary Text-book on the Differential and Integral Calculus, by M. W. Haskell; Cattell's American Men of Science, a Biographical Directory, by G. A. Miller); Notes; New Publications.

The American Naturalist for September contains the following articles: 'Histogenesis of the Retina,' by A. W. Weysse and W. S. Burgess; 'Notes on Marine Copepoda of Rhode Island,' by L. W. Williams; and 'Lichens of Mount Monadnock, New Hampshire,' R. H. Howe, Jr. The first paper is based on a study of the retina in the chick, is fully illustrated, and shows, among other things, that there is a large amount of individual variation in the rate of development of the retina as a whole, and also of its component parts. Mr. Williams, in his paper, records twenty-six species of copepods, three of which are described as new. Mr. Howe records no less than seventy-one species of lichens from Mt. Monadnock.

The Museums Journal of Great Britain for August contains an abstract of the Bristol meeting and a detailed history of the Bristol Museum and Art Gallery, by Ald. W. R. Barker. The next meeting of the association will be held at Dundee.

DISCUSSION AND CORRESPONDENCE.

CATS AS PLANT INVESTIGATORS.

It has taken half a lifetime for Americans to discover the delicious qualities of the pomelo, but it has taken the cats of Boston only six months to appreciate a new cat delicacy.

Professor Sargent, of the Arnold Arboretum, near Boston, imported from Central China a new vine, only a few plants of which were securable. As the species (*Actinidia polygamia*,