ing articles: "Farewell Visit Aboard the *Carnegie,* at Greenport, Long Island, June 27, 1910," frontispiece; "The Circumnavigation Cruise of the *Carnegie* for 1910–13 and the Perfection of Her Magnetic Work as Shown by Recent Tests," by L. A. Bauer; "Magnetic Chart Corrections Found on First Cruise of the *Carnegie,*" by L. A. Bauer and W. J. Peters; "Glossary of Atmospheric Electricity Terms," by W. W. Strong; "Observations of Earth-currents in Stockholm on May 19, 1910, during Passage of Halley's Comet," by D. Stenqvist and E. Petri; "Magnetische Beobachtungen in Seddin Während des Kometendurchangs, 19. Mai, 1910," by A. Nippoldt; "Magnetic Observations at Cheltenham, Maryland, May 15–20, 1910," by R. L. Faris; "The Magnetic Character of the Year 1909," by G. van Dyk; "Cooperation in British Antarctic Expedition, 1910," by J. Larmor; "Principal Magnetic Storms Recorded at the Cheltenham Magnetic Observatory, April–June, 1910," by O. H. Tittmann; "Die Werte der Erdmagnetischen Elemente in Apia, 1905–08," by F. Linke und G. Angenheister.

NOTES ON ENTOMOLOGY

RECENT parts of the "Genera Insectorum" include a continuation of W. Horn's Cicindelidæ, fascicle 82 b, pp. 105–208, plates 6 to 15, mostly colored; a most excellent review of the tiger beetles. Fascicle 100 is on the Pterophoridæ, or plume-moths, by E. Meyrick, 22 pp., 1 plate, colored, and is also a useful review. Fascicle 101 is on the large exotic cockroaches of the subfamily Epilamprinæ, by R. Shelford, 21 pp., 2 colored plates. Fascicle 102 on the ants of subfamily Dorylinæ, by C. Emery, 34 pp., 1 plate. Fascicles 103 and 104 are by L. B. Prout on the geometrid moths of the subfamilies Brephinæ, 16 pp., 1 plate, and Œnochrominæ, 120 pp., 2 plates. The latter group is almost wholly from the old world. Fascicle 105 is on the wasps of family Thynnidæ, by R. E. Turner, 62 pp., 4 plates (2 colored). He makes many new genera, mostly from Australia or South America. Fascicle 106 is on the ortalid flies of the group Ulidini, by F. Hendel, 76 pp., 4 colored plates of these beautiful insects. He describes two new species from the United States, *Euxesta tenuissima* (p. 28) from Georgia, and *Acrosticta rufiventris* (p. 52) from Texas. Fascicle 107 is on the minute hymenopterous parasites of the family Belytidæ, by J. J. Kieffer, 47 pp., 3 plates.

MAJOR THOS. L. CASEY has issued No. 1 of a "Memoirs on the Coleoptera," 205 pp., 1910. This number contains two articles, New Species of the Staphylinid Tribe Myrmedoniini and Synonymic and Descriptive Notes on the Pæderini and Pinophilini. He has described 365 new species, only a very few being identified with known forms. Most of the species are in the genera *Atheta* (which he divides into many subgenera)—*Sableta, Datomicra, Colpodota* and *Strigota.* Many of the species are from the eastern states.

MR. H. B. STOUGH is the author of a detailed study of the external morphology of one of the jumping plant lice.[1] Besides the structure of the body he takes up the wing-venation and color-pattern. He finds that the media and cubitus in nymphal wings are distinctly separate. From the structure of mouth and genitalia he concludes that the Psyllidæ are more closely related to the Aleurodidæ than to any other family of insects.

DR. G. ALESSANDRINI has made some experiments with the larvæ of *Piophila casei,* known as the cheese-skipper.[2] These larvæ can pass through the digestive tract of man or dog without greatly delaying development. In a dog the larvæ produced lesions of the intestine which facilitated the entrance of pathogenic germs. The larvæ can resist the action of many chemical agents, but the ultra-violet rays retard development. The life-cycle occupies about fifty days.

E. WASMANN continues his observations on

[1] "The hackberry Psylla, *Pachypsylla celtidismammæ* Riley, A Study in Comparative Insect Morphology," *Kans. Univ. Sci. Bull.,* V., No. 9, pp. 121–165, 10 pls., 1910.

[2] "Studi ed Esperienze sulle larve della *Piophila casei,*" *Arch. Parasitol.,* XIII., pp. 337–382, 33 figs.

the ants of Luxemburg.[3] This part contains the species of *Camponotus, Formica* and *Polyergus*. There is a large amount of biological matter about each species, but the plates, which are photographs, do not well illustrate the structure of the species.

The fifth volume of Theobald's monograph of the Culicidæ or mosquitoes of the world has been issued by the British Museum. It contains 646 pp., 6 pls. and 261 text figures. There are 392 species recorded since volume four was issued, not many of them new; most of the additions are from Africa or Australia, none from the United States.

W. Wesché has made a new subfamily of crane-flies, the Ceratocheilinæ.[4] It is based on two new genera of small flies from Africa. The proboscis is very long and thin, with short palpi inserted near its apex; the antennæ are short, and the second joint subglobular. The wings are similar to *Ptychoptera;* the claws are simple. One genus, *Ceratocheilus,* bears peculiar bifid hairs on the legs.

About 1892 to 1894 Dr. H. V. Nassonov published, in the Russian language, several large papers on the curious insects known as Strepsiptera. A translation has now been printed in German.[5] In an appendix is a review of the literature on the group since Nassonov's papers.

Part 7 of Kertesz's "Catalogus Dipterorum," 470 pp., includes the Syrphidæ, Dorylaidæ, Phoridæ and Clythridæ. *Clythia* replaces *Platypeza* and *Dorylas* replaces *Pipunculus.* Other 1,800 names of Meigen are used as follows: *Cinxia* for *Sericomyia, Toxomerus* for *Mesograpta, Zelima* for *Xylota, Penthesilea* for *Criorrhina, Lampetia* for *Merodon* and *Tubifera* for *Helophilus.*

[3] "Verzeichniss der Ameisen von Luxemburg mit biologischen Notizen," *Arch. trimes,* 1909, Vol. IV., fasc. 3 and 4, 103 pp., 5 plates.

[4] *Journ. Linn. Soc. London, Zool.,* XXX., pp. 355–368.

[5] "Untersuchungen zur Naturgeschichte der Strepsiptera," by A. v. Sipiagin, with notes by K. Hofender, *Berichte Naturwiss.-med. Vereins, Innsbruck,* XXXIII., pp. 206, 6 pls., 1910.

Dr. F. Ris has published a continuation of the Libellulinæ of the de Selys collection.[6] This part contains the genera *Libellula* and *Perithemis* and allied forms. *Libellula* is used in a broad sense, including *Plathemis* and *Ladona.* The forms of *Perithemis domitia* are considered as species, our common one thus becoming *P. tenera* Say.

Mr. F. Neeracher has made many interesting studies on the insects of the Rhine River that form an instructive paper.[7] He has found 13 species of Perlidæ, 19 of Ephemeridæ and 31 Trichoptera. He gives descriptions of the species, and of the larvæ of many of them. There are notes on male dimorphism, length of adult life, duration of generations, comparative abundance, and the date of first appearance for three consecutive years. He finds that the species with long life as adults appear in the spring, while those of a very short life appear in great numbers, and in mid-summer.

Volume V. of "Fauna Arctica," Jena, 1910, contains two entomological articles: one by J. C. H. de Meijere is on "Die Dipteren der arktischen Inseln," pp. 15–72. The Nemocera, Anthomyidæ and Scatomyzidæ are numerous, but other flies are scarce, and but two species of mosquitoes. The other article is by B. Poppius, "Die Coleopteren des artischen Gebietes," pp. 289–447. He considers the tree-limit as the southern boundary of the arctic fauna. The Carabidæ and Staphylinidæ are particularly well represented. There is a chapter on the geographic distribution of arctic beetles.

A new entomological journal is the *Bulletin of Entomological Research,* apparently a quarterly and devoted to the economic entomology of tropical Africa. It is edited by a committee of English entomologists and pathologists, Mr. Guy A. Marshall being secretary and editor. Parts 1 and 2 of volume I. have been

[6] "Collections Zoologiques du Baron Edm. de Selys Longchamps," Fasc. XI., pp. 245–384, 1 plate, 80 text figures, 1910.

[7] "Die Insektenfauna des Rheins und seine zuflüsse bei Basel," *Rev. Suisse Zool.,* XVIII., pp. 497–589, 1910.

issued, 160 pp. Most of the articles treat of insects injurious to man or animals.

SOME years ago Dr. O. M. Reuter published a system of classification of the hemipterous family Capsidæ. Now he has issued a new arrangement.[8] He has modified his previous classification in various details and made nine subfamilies. He gives a list of the genera, placing most of them in the proper subfamily. The article also includes a review of the classifications of the Heteroptera, and a new one, in which he arranges the 40 families in 12 superfamilies. There are tables to these families and to the groups of the Capsidæ. One of the new features is the elevation of *Piesma* to family rank.

NATHAN BANKS

SPECIAL ARTICLES

THE SELECTIVE ELIMINATION OF ORGANS

ONE of the monuments erected to Charles Darwin on the hundredth anniversary of his birth might have been a bibliographic index to the literature of organic evolution. But it is very much easier to pen a series of addresses on Darwin's method, Darwin's real opinion, Darwin's influence, than it is to compile a comprehensive bibliography and analyze it with the thoroughness and detail and wisdom necessary to make it a really useful aid to the investigator; it would have taken a very plucky librarian (with wealthy friends and a genius for interesting them in his undertakings) to carry it through.

As his card manuscript for the subject index approached completion he would have found that several drawers in his cabinet were required for the cards bearing the caption *natural selection*. These cards would have been a key to everything that can be said in a theoretical way about natural selection. The student who would take these cards and attempt conscientiously to cover the field would be ready, after a year's floundering about in the morass of rhetoric, to believe that all the arguments—for and against—have been presented in all their possible permutations.

That no solid foundation for a scientific superstructure is to be found in this polemic quagmire has often been recognized; at present natural selection is out of fashion among biologists. Other problems are in the searchlight.

It is quite natural that a theory which has been so much talked about but as little investigated should cease to be attractive at a time when concrete experimental proof is so much in demand. But can not such proof be adduced for natural selection? Is it not possible that the biologist of to-day with the powerful tools of statistical analysis at his service may be able to demonstrate the existence of natural selection, just as by the use of these tools he has been able to measure the strength of heredity?

Fortunately a beginning has already been made, for if the index were brought well up to date probably over a dozen of the cards in the drawers devoted to natural selection would bear titles of papers embodying the results of serious attempts to measure the intensity of the selective death rate in some organism.

In the selection theory of evolution—the pure Darwinian theory as popularly conceived—there are three factors which must be not only existent, but coexistent, if there is to be any shift in the characteristics of succeeding generations of any organism. These factors are variation, inheritance and selective elimination. If any one of these be absent or its force counterbalanced by some other factor, Darwinian evolution in that species can not be taking place at the moment in question.

Now a great mistake of most of the men who have written on organic evolution has been that they have tried to solve the whole problem. Lacking data (or having only a modicum of data), they have invoked assumptions and logic, and, having proved their assumptions by their logic, have proceeded to generalizations. In dealing with a problem

[8] "Neue Beiträge zur Phylogenie und Systematik der Miriden," *Acta Soc. Sci. Fenn.*, XXXVII., No. 3, 1910, pp. 171.