meta- side of the curve. In practise the two melting points are determined simultaneously, on the same thermometer. The method is extremely simple and requires a minimum of time and material, the results, so far as we have been able to test them, appear to be accurate to within 2 per cent. The ordinary method for the separation of these substances consists in laborious, repeated fractional crystallization.

We believe that this application of melting points is new.

A curve of a similar nature is given by mixtures of meta- and paranitraniline; it also can be used in the manner described above for quantitative analytical purposes. On the other hand, the melting points of mixtures of ortho- and paranitraniline vary in a remarkable manner, rising and falling through many degrees for relatively small differences in composition. The reason for this behavior is at present under investigation; it is possible that it may be connected causally with the constant, simultaneous production of ortho- and para-disubstituted benzene derivatives.

We expect to publish the full details of the work outlined in this note in an early number of the *Journal of the American Chemical Society.*

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December 21, 1907

NOTES ON ENTOMOLOGY

Dr. Hans Roeschke's revision of *Cychrus*[1] is a work of much interest to American coleopterists since about half of the forms occur in the United States. The material at his command was quite extensive for the western species, but with the eastern species he has a rather slight acquaintance. Dr. Van Dyke has examined for him the types of Leconte and Horn, and from the St. Petersburg Museum he has had types of Eschscholtz, Mannerheim and Ménétries, and much valuable material from the Oberthür collection. He recognizes three genera; *Scaphinotus,* with seven subgenera, among them *Nomaretus* and *Brennus; Cychrus,* with two subgenera; and *Sphæroderus.* Dr. Roeschke is a "lumper," and reduces the host of nominal species to 62; most of them with one or more subspecies, varieties or aberrations under them. There are three new species of *Scaphinotus,* all from Arizona, and one new subspecies of *S. elevatus. Nomaretus* is restricted to *N. cavicollis, bilobus* and *fissicollis,* the others forming a new subgenus, *Pseudonomaretus.* A new subgenus, *Neocychrus,* is erected for *C. angulatus,* and a new form, *N. behrensi,* from California. There are several new subspecies in *Brennus.* The plate illustrates the structural characters of the genera.

Major T. L. Casey, who apparently loves to study difficult groups of beetles, has published a large work on one of the little-known subfamilies of darkling beetles.[2] He divides the subfamily into 25 tribes, nine of which have no representatives in our fauna. There are 350 species, arranged in about 50 genera and several subgenera. Nearly all of the species are described as new, and most of them come from Arizona and California, others from Texas and Utah. Extremely few of the species are as yet known from more than one locality. About 25 of the species are from Mexico or Central America.

Mr. W. L. Distant has issued another part of his large work on Transvaal insects.[3] This part deals with the Fulgoridæ, and contains descriptions of many handsome species. But the most notable thing about the work is the placing of the portraits of Francis Walker and Carl Stål side by side.

[1] "Monographie der Carabiden-tribus Cychrini, mit Bemerkungen über Typen und Lokalrassen der amerikanischen Arten von Dr. Edwin C. Van Dyke," *Ann. Mus. Nat. Hung.,* V., pp. 99–277, 1 plate, 1907.

[2] "A revision of the American components of the Tenebrionid Subfamily Tentyriinæ," *Proc. Wash. Acad. Sci.,* IX., 275–522, 1907.

[3] "Insecta Transvaaliensia," Part VIII., pp. 181–204, 1907; 2 colored plates and several text-figures.

A REMARKABLE new scale-insect is described[4] by Mr. Hugh Scott, from a desert plant found in Algeria. The scale is covered by a thick mass of white threads. It belongs to the Dactylopiinæ and is near the genus *Asterolecanium,* but the mass of white threads hides the true nature of the insect.

DR. R. STERNFELD has written an account of the mouth parts and the use of the stomach in Ephemeridæ or may-flies.[5] The mouth parts of the adult may-fly are useless, and rudimentary. He finds that this degeneration began in the nymphal stage. As the adult insect takes no food, another than the natural use has been found for the stomach. It can be inflated with air, and serves to lift the insect during flight or in aerial dancing. The author has made use of American may-flies in much of the work.

MR. E. D. BALL has published a revision of the leaf-hoppers of the genus *Eutettix.*[6] He divides the genus into three subgenera. He gives tables to the 33 species, one of which has a number of varieties, formerly considered species. There are chapters on the phylogeny of the genus and subgenera, geographical distribution and adaptation, and life histories, and economic relations of the genus. Four excellent plates illustrate the article.

IN the *Proceedings of the Entom. Society of London,* 1907, pp. xliii–xlvii, Mr. E. E. Austen treats of a parasitic African fly whose larva sometimes is a subcutaneous parasite on man. It is known to the natives as the "Tumba" fly. This fly, which belongs to the subfamily Calliphorinæ, was formerly supposed to be the *Bengalia depressa,* but Mr. Austen shows that, though very similar, it is quite distinct, and should be known as *Cordylobia anthropophaga* Grünberg.

[4] "On *Cerococcus eremobius,* gen. et sp. n.; an aberrant form of Coccidæ," *Trans. Linn. Soc. London Zool.* (2), IX., pp. 455–464, 1 plate, 1907.

[5] "Die Verkümmerung der Mundteile und der Funktionswechsel des Darms bei den Ephemeriden," *Zool. Jahrb. Abt. Anat.,* XXIV., pp. 415–430, 1 plate.

[6] "The Genus *Eutettix,*" *Proc. Davenport Acad. Sci.,* XII., pp. 27–94, 1907; also as Contrib. Dept. Zool. Entom. Ohio State Univ., No. 27.

THE increased interest taken in the blood-sucking flies of the family Stomoxyidæ has induced Dr. M. Bezzi to give a synopsis and catalogue of the species.[7] A synoptic table is given to the genera, and to most of the species. Three new species are described, two from Africa, one from China. There is a list of species wrongly referred to *Stomoxys.* The author adopts the generic name *Siphona* in place of *Hæmatobia;* our species of the latter genus, however, belong in *Lyperosia.*

THE problems furnished by the life of cave insects holds always a peculiar attraction for entomologists. Mr. A. M. Banta has followed this lure and investigated the fauna (largely insect) of Mayfield's cave in Indiana. The results now issued[8] make a most interesting addition to cave literature. He records the capture of 63 species of insects and 21 species of Arachnida, and to many of them he has furnished notes on habits or development. More than one half of the insects (33 species) are flies, two of which are described (by Adams) as new species. There are chapters on the origin of cave life, food of cave animals, light, temperature, moisture, etc. A long bibliography completes the paper.

MR. C. G. HEWITT has begun the publication of a considerable work on a long-neglected insect, the common house-fly.[9] Part 1, which is now issued, deals with the anatomy, both external and internal, of the fly. Especial attention is paid to the internal structure of the head, and the tracheal system is described in detail. The muscular and nervous system is similar to that of *Volucella* and *Calliphora,* while the alimentary canal is much like that of the blood-sucking flies, *Stomoxys* and *Glossina.* Plate 1 gives colored figures of the house-fly, the root-maggot fly, the small house-

[7] "Mosche ematofaghe," *Rendic. R. Inst. Lombardi Sci. Lett.* (3), XL., 1907, 30 pp.

[8] "The Fauna of Mayfield's Cave," Publication No. 67, Carnegie Institution of Washington, 114 pages, 13 figures, 1907.

[9] "The Structure, Development and Bionomics of the House-fly, *Musca domestica* Linn.," *Quart. Journ. Micr. Sci.,* Vol. 51, pp. 395–448, 1907, 5 plates.

fly, and the stable fly. There is a long bibliography.

NATHAN BANKS

SCIENCE IN NEW ZEALAND

THE Canterbury Philosophical Institute, New Zealand, has made arrangements for conducting an important expedition to some of the islands in the Southern Ocean. About twenty New Zealand scientists will be taken to the Auckland Islands and the Campbell Islands in one of the government's steamers, and they will remain on the islands for about a week, inquiring into many branches of scientific work. The primary object of the expedition is to enable observations to be made by Dr. C. Coleridge Farr and other investigators in regard to terrestrial magnetism. The time is very opportune for this, because active work in the same field is being undertaken in other parts of the Pacific Ocean. The council of the Canterbury Institute, however, suggested that the sphere of operations should be largely extended. The government of the dominion has fallen in with the suggestion, and a fairly large party will be taken to the islands.

The Auckland Islands lie about 200 miles south of New Zealand, and the Campbell Islands about 300 miles southwest of the dominion. They are visited periodically by the government's steamers, which have provisions on them for shipwrecked mariners. The Campbell Islands are used as a sheep run, but the Auckland Islands are quite uninhabited. Scientists have reported upon both groups on previous occasions, but the coming expedition will make very comprehensive investigations. The principal interest of the expedition centers in the fact that there will be concerted action to obtain further evidence in regard to the old antarctic continent, which, it is supposed, joined New Zealand to South America on the one hand and to Australia, Kerguelen Land, Mauritius, Madagascar, Africa, and the island of Tristan D'Acunha on the other hand. If this ancient continent had an existence, the Auckland and Campbell Islands are probably waifs and strays that it has left behind. This theory has found general acceptance in New Zealand. A mass of evidence has been collected by zoologists and botanists, and it seems to leave little doubt that the antarctic continent once enjoyed a mild climate, that it carried large and extensive forests and other vegetation of a rich, luxuriant, and almost tropical character, and that it was inhabited by a large population of animals, some of which are still represented in New Zealand, Australia and South America. The latest evidence in this direction is the discovery of fossil leaves by a member of the "Discovery" Antarctic Expedition in South Victoria Land. These fossil leaves corroborate evidence that was obtained previously. It is hoped that more evidence will be added by the New Zealand scientists. They expect to leave in the middle of November of this year, and to return in the following month. They will be divided into two parties, one party going to each group. The Hon. R. McNab, minister for lands, has been asked to take the lead, but if Parliament is in session he will not be able to take part in the expedition. The following scientists will join the party:

Auckland Islands: Magnetic observers, Dr. C. Coleridge Farr and Mr. H. D. Cook (Christchurch); zoologists, Dr. C. Chilton (Christchurch) and Dr. W. B. Benham (Dunedin), general zoology; Mr. G. V. Hudson (Wellington), insects; Mr. J. Drummond (Christchurch), ornithology; Mr. G. R. Marriner (Christchurch), general zoology. Botanists, Dr. L. Cockayne (Christchurch), ecological botany; Mr. A. H. Cockayne (Wellington), plant pathology, and Mr. B. C. Aston (Wellington). Geologists, Messrs. R. Speight (Christchurch) and Clark (Auckland). Photographer, Mr. S. Page (Christchurch).

Campbell Islands: Magnetic observers, Mr. H. P. Skey and Mr. E. Kidson (Christchurch). Zoologists, Professor Kirk (Wellington) and Mr. J. B. Mayne (Christchurch), Dr. Hilgendorf (Christchurch), general zoology, and Mr. E. B. Waite (Christchurch), ichthyology. Botanists, Mr. M. M. Lairy (Christchurch) and Mr. D. Petrie (Auckland). Geologists, Dr. Marshall (Dunedin), Professor Jarman