

Fischer, 1829	Lilljeborg, 1874
Bachman, 1837, 1839	Gill, 1876
Schinz, 1844	Rink, 1877
Wagner, 1844	Feilden, 1878
Nilsson, 1847	Greely, 1888
Luben, 1848	Brauer, 1888
Waterhouse, 1848	Merriam, 1892

If there were no other reason for choosing *glacialis* instead of *arcticus*, and wholly irrespective of the merits of the two names, *glacialis* would have to be taken if we accept the rule that in cases of names of equal pertinency, the first reviser of the group has the privilege of fixing the name. *Lepus glacialis* was used without exception by all the naturalists who published on American rabbits between 1819 and 1843, including Richardson, Godman, Lesson, Hamilton Smith, Fischer and Bachman. It is obvious, therefore, that the name *glacialis* cannot be displaced unless one of earlier date be found.

Linnæus described the Arctic-Alpine Hare of the mountains of northern Europe, under the name *Lepus timidus*, in the 10th edition of his *Systema Naturæ* (1758, p. 57), and referred to his previous description in *Fauna Suecica* (1746, No. 19, p. 8), thus fixing Scandinavia, and presumably southern Sweden, as the type locality of the species. The common large hare of Europe, although often confused with *L. timidus*, is a distinct species and was named *L. europæus* by Pallas as early as 1778. The distinctness of the two was admitted by Nilsson, Lilljeborg and others, and is recognized by Lydekker, one of the most conservative mammalogists of the present day. Notwithstanding these facts, Mr. Rhoads takes the trouble to re-restrict the type locality of *timidus* to 'Southern Sweden,' and to re-affirm the distinctness of the American animal—a point conceded by nearly all mammalogists for three-quarters of a century.

Mr. Rhoads' next effort is to divide the American Polar Hare into additional species and sub-species, as follows: *L. arcticus* [= *L. glacialis* Leach] from Baffin Land, *L. arcticus bangsii* from Newfoundland; and *L. greenlandicus* from Greenland. Instead of contrasting these with one another, or with the original *Lepus glacialis* of Leach as a standard, he crosses the seas to make his comparison with

*L. timidus*. Hence, if one aspires to know how the Newfoundland and Greenland Hares differ from the typical American animal from Baffin Land, he must first ascertain how each differs from the Scandinavian *timidus*, and then, by various processes of addition and subtraction, seek to find how they differ from one another. At this point he is likely to be overwhelmed with discouragement, for Mr. Rhoads does not always describe the same parts or structures in the forms he names as new. Thus, we are told that, in *L. timidus* "the radius of the arc described by the incisors is one-eighth ( $\frac{1}{8}$ ) of the basilar length of the skull," and in *L. greenlandicus* the same radius 'is one-fifth ( $\frac{1}{5}$ ) the basilar length,' but in *arcticus* and *bangsii* the arcs of the incisors are not described at all, leaving the student of the geometry of Leporine teeth in abject despair.

After a somewhat exhausting study of Mr. Rhoads' paper, the only tangible difference I am able to find between the Newfoundland and Baffin Land Hares is that the latter turns gray in summer, while the former turns only partly gray. This sets one to wondering if Mr. Rhoads will next separate weasels that turn white in winter from specimens of the same species that remain brown the year round.

At the close of his paper Mr. Rhoads states that he "is now preparing a more comprehensive revision, with illustrations, of the New World representatives of the *Lepus timidus* group." Let us earnestly hope that he will make it sufficiently comprehensive to tell how the component parts of the American Polar Hare differ from one another. C. H. M.

*North American Birds.* By H. NEHRING. 4°, part XIII., pp. 47, pls. 2. March, 1896. Geo. Brumder, Milwaukee.

The 13th part of Nehrling's well-known work has just come to hand. It treats of the Cardinals, Rose-breasted and Blue Grosbeaks, Indigo, Lazuli and Painted Buntings, Grass-quits, the Dicksissel, Lark Bunting or White-winged Blackbird, and Bobolink. The text maintains the high standard of the earlier numbers, but the two colored plates, both of which are of the 'mixed' kind, are cheaply printed and decidedly inferior.

An unusually large proportion of the birds whose life histories make up the present part are species with which Mr. Nehrling is personally familiar; as a result most of the biographies are original and more than ordinarily interesting. Mr. Nehrling not only loves birds, but he has a keen ear for the harmonies of nature. "The Bobolink," he says, "never sings before sunrise. It begins its sweet music when the more earnest and solemn melody of the Robin, which was heard from earliest daybreak, is almost at its close. Nature seems to have ordained that the serious part of her musical entertainment in the morning hours should be heard first, and that the lively and merry strains should follow them. In the evening this order is reversed, and after the comedy is concluded nature lulls us to repose by the mellow notes of the Vesper Sparrow and the pensive and still more melodious strains of the solitary Thrush."

C. H. M.

*The Book of Antelopes.* By P. L. SCLATER and OLDFIELD THOMAS. With colored plates by WOLF and SMIT. 4°. London, R. H. Porter, 1895-96.

Since the notice of parts I. and II. of this admirable work (SCIENCE, April 5, 1895, p. 389) the first volume has been completed and one part of the second has appeared. Vol. I. contains 220 pages and twenty-four handsomely colored plates, besides numerous useful figures in the text.

Parts III. and IV. treat of the duikers (genus *Cephalophus*), and part IV., which completes the first volume, closes with an account of the four-horned antelope (*Tetraceros quadricornis*). The duikers, unlike most of the antelopes, live in brush and forests. They inhabit Africa south of the Sahara, and most of the species are restricted to West Africa. Twenty species are recognized, ranging in size 'from that of a small donkey down to that of a hare.' As a rule they are handsomely colored, though most of them lack the striking and, in some cases, startling recognition markings that characterize some of the other groups. A few of the species, however, as the banded duiker (*C. doriae*) and the yellow-backed duiker (*C. sylvicultrix*), are conspicuously marked.

Part V., comprising ninety-two pages and six colored plates, takes up the African subfamily Neotraginæ and treats of the klipspringer (*Oreotragus*), the oribis (*Ouretria*), the grysbok and steinboks (*Raphicerus*), the Zanzibar and Livingstone's antelopes (*Nesotragus*), the royal antelope (*Neotragus*) and the dik-diks (*Madoqua*).

The book of Antelopes is a timely work and it is matter for congratulation that the colored plates prepared under the supervision of the late Sir Victor Brook more than twenty years ago are finally given to the public accompanied by such authoritative letter press. If the distinguished authors have erred in the treatment of certain species it is on the side of conservatism, and it must be admitted that they have enjoyed unsurpassed opportunities for the study of the living animals at the Zoölogical Society's Gardens, of which the senior author has had charge for nearly forty years, and for the study of skins and skulls in the rich mammal collection of the British Museum, of which the junior author has long been curator.

Still, one is filled with regret at the large number of species unrepresented, or at most imperfectly represented, in museums, and it is sad to feel that many species are on the road to rapid extinction. Before it is too late sportsmen as well as naturalists should spare no pains to secure specimens of the rarer kinds and see that they reach some of the larger museums, where their permanent preservation will be guaranteed.

C. H. M.

*Chemistry for Engineers and Manufacturers.* By BERTRAM BLOUNT, F. I. C., F. C. S. and A. G. BLOXAM, F. I. C., F. C. S. Vol. I.—*Chemistry of Engineering, Building and Metallurgy.* Philadelphia, J. B. Lippincott Co. London, Charles Griffin & Co., L't'd. 1896. 8vo, 244 pp., Illust. \$3.50.

This is the first volume of a small and concise work on Chemical Technology, which is especially intended for engineers, architects, builders and factory superintendents, as well as students of chemical technology. It is intended primarily for those whose knowledge of chemical theories and processes is limited, but so skilfully is the subject-matter presented that even trained chemists and expert engineers may find the