the predictions in the almanacs, which were first printed in Latin and afterwards in the language of the country where they appeared. Such an almanac, the *Bauern-Kalender*, or peasants' calendar, having symbols to represent the predicted weather, is still published in the Austrian Tyrol. The custom of writing accounts of extraordinary meteorological events is very old, and, after the invention of printing, these reports, in pamphlet form or on single sheets, were widely distributed throughout Europe. As they were intended for the people, few have been preserved in libraries, but some of these are here reproduced.

The volume contains 33 pages of historical and critical introduction and 26 *facsimiles* of German, French, English, Italian, Spanish, Danish and Dutch tracts, most of them curiously illustrated. Probably to no other person than Dr. Hellmann would so many rare works in all parts of Europe be accessible, and his scholarly preface greatly aids the comprehension of these interesting specimens of ancient weather lore. One or two copies of the volume may be obtained for the publisher's price, viz., 20 Marks, or $5, from the undersigned, at Hyde Park, Mass.

A. L. ROTCH.

BOOKS RECEIVED.

Proceedings of the Fourth International Congress of Zoology, Cambridge, 22–27 August, 1898. London, C. J. Clay & Sons. 1899. Pp. xiv + 422 and 15 plates. 15s. net.

Cinématique et mécanismes potentiel et mécanique des fluides. H. POINCARÉ. Paris, Carré et C. Naud. 1896. Pp. 385.

Alaska and the Klondike. ANGELO HEILPRIN. New York, D. Appleton & Co. 1899. Pp. x + 312.

Leitfaden der Kartenentwurfslehre. KARL ZÖPPRITZ. Leipzig, Teubner. 1899. Pp. x + 178. Mark 4.80.

Der Gang des Menschen. II part. OTTO FISCHER. Leipzig, Teubner. Pp. 130 and 12 plates. Mark 8.

Elektrische Untersuchungen. W. G. HANKEL. Abhandlung der mathematisch-physischen Classe der königlichen sächsischen Gesellschaft der Wissenschaften. Leipzig, Teubner. 1899. Vol. 24. Pp. 471–97 and 2 plates. Mark 2.

Practical Physiology. DR. BURGH BIRCH. Philadelphia, Blakiston's Son & Co. 1899. Pp. x + 273. $1.75.

The Steam Engine and Gas and Oil Engines. JOHN PERRY. New York and London, The Macmillan Company. 1899. Pp. viii + 646.

Geological Results, based on Material from New Britain, New Guinea, Loyalty Islands and elsewhere, collected during the years 1895–7. Cambridge, The University Press. 1899. Pp. 356 and 5 plates.

SCIENTIFIC JOURNALS AND ARTICLES.

The Journal of Geology, April–May, 1899.—H. F. Reid, 'The Variations of Glaciers,' pp. 217–225. Professor Reid presents the fourth of his summaries of observations on the advance and retreat of glaciers in different parts of the world. While recession is the rule, there are some instances of advance, and some evidence has been gathered of recurrent cycles of maxima and minima. In the case of two Swiss glaciers the periods proved, respectively, 44 and 51 years.

G. C. Curtis and J. B. Woodworth, Nantucket, 'A Morainal Island,' pp. 226–236. The former author describes a recently constructed model of Nantucket, and the latter its geology.

Mark S. W. Jefferson, 'Beach Cusps,' pp. 237–246. The small cusps along beaches are explained by the action of retreating high waves, whose waters breach the strip of seaweed that is usually present just above the line of ordinary waves, and that binds the shingle together. Between the breaches the cusps gather at intervals of ten to forty feet.

Walter D. Wilcox, 'A Certain Type of Lake Formation in the Canadian Rockies,' pp. 247–260. Interesting data are given regarding the glacial phenomena of the Canadian Rockies, and particularly regarding Lake Louise. A means of estimating the time since the retreat of the great ice sheet is suggested, but for lack of the necessary apparatus it has not been carried out.

J. P. Goode, 'The Piracy of the Yellowstone,' pp. 261–271. Recent changes in the drainage of Yellowstone Lake are described and explained. The Yellowstone River, as at present known, appears to be of development in late geological time.

C. E. Monroe and E. E. Teller, 'The Fauna of the Devonian at Milwaukee, Wis.,' pp. 272–

283. Recent excavations for the the Milwaukee water works have made available a large quantity of loose rock, which proves to be rich in Devonian fossils. These have been identified and tabulated by the authors.

H. S. Washington, 'The Petrographical Province of Essex Co., Mass.,' pp. 284–294. This paper on the basic dikes concludes the series.

Under 'Reviews' an excellent summary by T. A. Jagger is given of the recent valuable experiments of Morosewicz in the artificial production of rocks and minerals.

American Chemical Journal, June, 1899.—'The Valuation of Saccharin,' by E. Emmet Reid. By boiling for two hours with a hydrochloric acid solution of the proper strength and then distilling with alkali, the ammonia can be collected in a standard acid solution and readily determined. It was shown that para sulphamine benzoic acid was not acted upon under similar conditions. This, therefore, appears to be a quick, accurate method for determining the amount of the sweetening substance in the commercial saccharine. 'Some Derivations of Camphoroxime,' by G. B. Frankforter and A. D. Mayo. 'Camphoroxime Derivatives,' by G. B. Frankforter and P. M. Glasoe. 'The Laboratory Production of Asphalts from Animal and Vegetable Materials,' by W. C. Day. The author has obtained substances similar to the natural asphalts by distilling animal and vegetable matter, both separately and mixed. 'The Composition of Nitrogen Iodide and the Action of Iodine on the Fatty Amines,' by J. F. Norris and A. I. Franklin. The evidence points to the fact that the compound formed by the action of iodine on ammonia is not a direct addition-product, nor do the fatty amines form such compounds. 'On the Action of Sodic Ethylate on Tribromdinitro Benzol,' by C. L. Jackson and W. Koch. 'The Action of Sulphocarbanilide on certain Acid Anhydrides,' by F. L. Dunlap. 'The Action of Ammonia and Amines on Chlorides of Silicon,' by F. Lengfeld. The chlorine is replaced by the ammonia and amine residues, forming amides of silicon.

J. E. G.

Appleton's *Popular Science Monthly* for July has as a frontispiece an excellent portrait of Professor W. K. Brooks, and the number contains a sketch of his life and scientific work. The number contains articles by President D. S. Jordan, describing the succession of fishes inhabiting a brook; by Professor W. K. Brooks, entitled 'Thoughts about Universities;' by Professor Edward Renouf, on 'Acetylene,' and by Dr. C. C. Abbott, on 'The Antiquity of Man in North America.'

We regret that the *Index Medicus* has been discontinued. It is unfortunate that the efforts for its continuation have not been successful, but the mass of medical literature has become so great, and, it must be added, in most cases so unimportant, that an index would require some form of public support.

SOCIETIES AND ACADEMIES.

THE NEW YORK ACADEMY OF SCIENCES—SECTION OF BIOLOGY.

The Section met on May 8th, Professor F. S. Lee presiding. The following program was then offered:

1. W. A. Rankin: 'The Crustacea of the Bermuda Islands, with Notes on the Collection made by the New York University Expeditions to the Bermudas in 1897 and 1898.'

2. H. F. Osborn: 'Upon the Structure of the Mule-footed Hog of Texas.'

'Upon the Structure of *Tylosaurus dyspelor*, including the Cartilaginous Sternum.'

Professor Rankin's paper gives a list of 61 recorded species of Crustacea from the Bermuda Islands. During the summers of 1897 and 1898 a party from the New York University spent a few weeks investigating the fauna of the islands, and the Crustacean collections were studied by the author.

Of the total number of species 43 were found by the expedition, and notes on their distribution are given. Eight of these species are new to the Bermudas, and two, *Nika bermudensis* and *Alpheus lancirostris*, are new species described and figured in this paper. The genus *Nika* is now for the first time recorded from the West Atlantic region.

The physical conditions of the islands are touched on, and the Crustacea are shown to be in the main similar to those found in the West