by Karsch the name *Hollandella*. I am, like Dr. Sharp, unable to recognize characters of family value, and the distinction between the group, typified by the genus in question, and the generally recognized constituents of the family Arbelidæ appears to me to be of not more than subfamily importance. From this standpoint the nomenclature would be as follows: Family Arbelidæ, subfamily *Hollandellinæ*, genus *Hollandella*, etc.

I imagine that the change which I propose will not be displeasing either to Dr. Karsch, the learned custodian of the Royal Museum of Natural History in Berlin, or to my friend the Director of the Carnegie Museum.

THEO. GILL.

WASHINGTON, May. 1901.

CURRENT NOTES ON PHYSIOGRAPHY.

U. S. GEOLOGIC FOLIOS.

THE folios of the Geologic Atlas of the United States continue to furnish an unrivaled source of physiographic as well as of geologic information. Among the more recent, the following may be noted: The Monterey folio (Va., W. Va., Darton) exhibits the crowded Appalachians bordering the Allegheny plateau, a district of strongly corrugated strata now reduced to ridges and valleys of anticlinal, synclinal and monoclinal structure. Bristol (Va., Tenn., Campbell) includes a monoclinal belt with many overthrust faults, characteristic of the Appalachians in Tennessee; the mountains here are nearly rectilinear, in contrast to the sharp-turning zigzags further northeast. Between the mountains is an open country with many low ridges, once a lowland, but now dissected after a gently slanting uplift. Standingstone (Tenn., Campbell) presents a portion of the Cumberland plateau, with its ragged western escarpment descending to the 'highlands,' themselves dissected by streams that go to the lowlands next west. Uvalde (Tex., Vaughan) contains a part of the Rio Grande plain bordering the Edwards plateau whose dissected escarpment appears on the north. The plateau has yielded sand and silt with which the broad valleys of the plain are washed; here the streams frequently disappear and reappear, the Nueces river being an unusually large example of this kind. Elmoro (Col., Hills) shows the broad Plains that front the Rocky mountains near Trinidad to be surfaces of denudation, remnants of the removed strata being preserved under the lavas of Raton mesa; the Plains are now somewhat trenched by the streams. Fort Benton (Mont., Weed) gives another illustration of the great denudation by which the Plains have been formed, as testified to by the isolation of the Highwood mountains, an embossed body of dissected lavas and dikes; the larger river valleys of to-day are here sharply sunk beneath the Plains. Little Belt (Mont., Weed) affords an excellent illustration of the topographic consequences of the Neocene warping, for the modern deposits of Smith river basin (described as lacustrine, although consisting of irregularly bedded sands and loose conglomerates) overlap unconformably upon both the denuded central and marginal rocks of the greater Laramie deformation. Like the Highwood mountains, south of Fort Benton, the Crazy mountains, a network of dikes, here testify to the great erosion of the Plains that they overlook. Absaroka (Wyo., Hague) is characterized by the superb dissection of a high plateau of lavas and volcanic breccias; the whole region has been glaciated, and some of the valleys heading in great cirques seem to show glacial scouring in their smooth-sided, trough-like forms. Tacoma (Wash., Willis and Smith) includes examples of channels of ancient glaciers between uplands largely composed of drift; the channels now being invaded by the sea from without and by alluvium from within; the sounds are thus explained by retreat of the ice and not by depression of the land. Mother-Lode (Cal., Ransome) exhibits parts of the uplifted and dissected peneplain of the Sierra Nevada; it was strewn with gravels and flooded with lavas and volcanic conglomerates before uplift; it is now trenched by canyon-valleys. A few eminences surmount the uplands; several lava-capped table mountains standing up with long even-crested tops between the valleys.

RIVERS OF EAST YORKSHIRE.

THE subject of the Sedgwick essay announced by Cambridge University for 1900 was on the dependence of water-courses upon geological

structure, with the stipulation that the area studied should be British. The prize for the best essay was awarded to F. R. Cowper Reed, of Trinity College, who wrote on 'The Geological History of the Rivers of East Yorkshire' (London, Clay and Sons, 1901, 103 pp., map, 8 cuts). Thirty pages are given to a geological history of the region. River development began with the post-Cretaceous uplift and continued through a first cycle with important adjustments till an extensive peneplain had been formed. Near the close of Oligocene time came another uplift, affecting the British Isles and Western Europe. The rivers of the peneplain were thus revived and set to work sculpturing the existent topography; and at this time it is believed that a flat anticline was formed along the axis of the moorland north of the vale of Pickering, producing important changes in certain stream courses. A depression of moderate amount occurred near the end of the Pliocene; the area of greatest sinking then came to be occupied by the North sea, whose extent has since been increased by wave work along the shore. Then came the glacial period and its changes of level, when many valleys were clogged with till and many streams were reversed by ice blockades. Since the ice retreated, a small uplift and a small depression have occurred. The development of river courses is followed through these various land movements, special attention being given to the changes caused by the growth of subsequent branches along belts of weak strata, and by till and ice barriers. The essay is easily the most detailed and successful study of the rivers of northern England that has yet appeared.

THE VOGTLAND.

A DISTRICT of uplands and valleys, drained chiefly by the Elster, roughly located as in the southwest corner of Saxony, and known as the Vogtland, has been described by Wohlrab ('Das Vogtland als geographisches Individuum,' Forsch. deut. Landes u. Volkeskunde, XII., 1899, 101–185, map and plates). The essay is interesting as a partial recognition of the necessity of treating geographical forms with respect to their origin, yet it is hampered by the retention of certain traditional empirical methods and by the incomplete adoption of more modern rational methods. The gently undulating uplands of schists, surmounted by low ridges and knobs of harder rocks, are properly presented as a worn-down old-mountain surface; but the descriptions of its landscapes thus considered are all quoted, as if the author wished to leave to others the responsibility of so venturesome an explanation. No explicit mention is made of the slanting uplift of the region, whereby its streams were enabled to incise their modern valleys. Indeed, the occurrence of bold and rocky valley sides beneath the milder scenery of the rolling uplands is presented as if it were somewhat out of the order of nature, worthy of being looked on as a curiosity, instead of the well-understood and commonplace accompaniment of dissection recently revived by uplift after a long period of relative quiescence. The details of valley form are incompletely described, though incidental mention is made of the incipient flood plains on the convex banks of the meandering streams, opposite the steep valley slopes over the concave banks. Many arithmetical details are given concerning the form of ridges and valleys: for example, the mean slopes of many valleys are calculated; although when the upper course of a valley is shallow and broad, slightly depressed beneath the uplands, while the lower course is sharply incised, relatively narrow and steep-sided, it is as inappropriate to measure its mean slope as it would be to average the price of old scrap iron and new steel rails. All these details have a certain value, but their value would be greatly increased if a more thorough scheme of physiographic description served as the basis of the work.

W. M. DAVIS.

NOTES ON OCEANOGRAPHY.

AN OCEANOGRAPHICAL MUSEUM.

IN connection with the exhibit of the collections made by the Prince of Monaco at the Paris Exposition, a convenient summary of his scientific work has been published by Richard (Les Campagnes Scientifiques de S. A. S. le Prince Albert Ier de Monaco, 1900). Brief descriptions of the different vessels and types of apparatus employed during the voyages, and a more