embraced in the two families just named. The authors describe and figure fifty-six new species of the Cochliodontidae, together with eight species previously published. They embrace, in all, fourteen genera, six of which are new; namely, Vaticinodus, Stenopterodus, Chitonodus, Deltodopsis, Orthopleurodus, and Taenodus. The last is a hitherto unpublished name, proposed by de Koninck. Of the Psammodontidae, thirteen species (eleven new) are described and figured; eleven of them being referred to Psammodus, and two to Copodus. Eleven genera are recognized among the Ichthyodorulites, one of which, Eunemacanthus, they propose as new. Of these genera, they describe and figure twenty-two species, only two of which have before been published. The specific and generic descriptions are full and clear, and Mr. St. John has made good use of his large experience in their discussion.

Pages 269–322 and four plates are devoted to descriptions and figures of fifty-five species of crinoids, together with a few carboniferous shells. Descriptions of all these except one of the shells were published by Mr. Worthen, without illustrations, in 1882, in Bulletin No. 1 of the Illinois state museum of natural history.

On pp. 323–326 he describes eight species of carboniferous mollusca without illustrations.

Pages 327–338 and one plate are occupied by Worthen and S. A. Miller's descriptions and illustrations of nine forms of echinoderms. Their material for this study was imperfect, and yet they have proposed five new genera; namely, Compsaster, Cholaster, Tremaster, Hybochinus, and Echinodiscus. The latter they refer to the Agelacrinidae, together with Archaeocidaris.

Pages 341–357 are occupied by Mr. Charles A. Wachsmuth. He figures and redescribes, in this volume, two echinoderms which he had previously described in the bulletin of the Illinois state museum of natural history. Following this, he gives an important discussion of certain blastoids, with a description of a new genus, namely, Heteroschisma.

The text of the volume closes with descriptions of three new species of blastoids by Prof. W. H. Barris. They are, however, without illustrations, except one woodcut. Professor Barris refers one of these species to Pentremites Say, and the other two to Elaeacrinus Roemer. He rejects the generic name Nucleocrinus Conrad, because of the erroneous description which Conrad gave of it. Nucleocrinus is, without doubt, identical with Elaeacrinus; but unfortunately Conrad's type specimen, which is still extant, shows plainly that he mistook its base for its summit. Diagnoses are seldom perfect, and it is difficult to determine how much of error we ought to overlook in the retention of imperfectly defined genera.

The letterpress and binding of this book are creditable; but the illustrations are not up to that standard of excellence which was attained in the previous volumes, and which the present state of art demands. Still, they serve well for the identification of the objects which they are intended to illustrate. The make-up of the book has one inexcusable deficiency, which was, no doubt, due to an oversight, since the other volumes are free from this defect. We refer to the absence of any table of contents, or any reference in the index to the different authors, or the titles of their subjects. This does not detract from the merit of the work, however, which is, as a whole, very great; and the people of Illinois may well be proud of what has been accomplished by their geological survey, even if it should now be suspended.

## *INTELLIGENCE FROM AMERICAN SCIENTIFIC STATIONS.*

### GOVERNMENT ORGANIZATIONS.

#### Geological survey.

*Work in the District of Columbia.* — It is intended to map about three hundred square miles of the region about Washington, including the District of Columbia and adjacent country on the north, east, and west, extending to a distance of about ten miles from the district boundaries in those directions. This map will be used for the delineation of the geological features of the district and adjacent country, the investigation of which has been carried on for some time by Mr. W. H. McGee. The topographic work done so far consists mainly of the compilation and transferrence of material furnished by the Coast and geodetic survey in the form of original unpublished sheets upon a scale of 1-15,000, with contours twenty feet apart vertically, and covering the greater part of the area required for the immediate use of the geologist. Mr. S. H. Bodfish has been assigned to the topographic work, and will utilize all work previously done in the area above indicated by the coast-survey and the commissioners of the district.

*Springs of Florida.* — Prof. L. C. Johnson, while working in Florida during January, gave some attention to the springs and wells in the vicinity of

Jacksonville. He says that within five miles of Jacksonville is a remarkable spring, known as the Moncrief spring, the waters of which seem to be identical with those of the excavation at the city water-works and of many of the springs of this portion of the state. They differ from those of the southern and western portions in being more decidedly chalybeate. In temperature they are decidedly similar. All those near Jacksonville have temperatures of 72° F., and are said to be almost invariable, summer and winter. The extreme range is two degrees; that is, from 72° to 74°. The deep wells, the shallow ones, and also several lake-like springs, all register 72° F. Some are in superficial strata, reaching a depth of only fifteen or twenty feet; others are from thirty to forty feet deep in clay and rock; and some artesian wells penetrate to two hundred feet.

*Chemical division.* — During January and February Prof. F. W. Clarke and Dr. T. H. Chatard have been busy in the analyses of mineral waters. Among them, Professor Clarke has examined water from the Helena hot-springs of Helena, Montana Territory, which is an alkaline saline water, and water from the warm springs of Livingston, Montana, which is a calcic sulphur-water. Both are thermal, and these are probably the first analyses ever made of them. Dr. Thomas Chatard has also finished some analyses of Damourite from the well-known topaz locality at Stoneham, Me.

At New Haven, Messrs. Barus and Hallock, during January, were engaged in experiments to determine the exact boiling-point of zinc.

*The north wind of California.* — Mr. Gilbert Thompson, while engaged in topographical researches in the Cascade-range section of California, has been incidentally collecting information concerning what is generally observed as the 'north wind of California,' as it was first observed in that state, and supposed to be local. The name, however, should not be so restricted, as it should be extended to the Pacific slope of the United States and possibly of North America. The characteristics of this wind have been more particularly described by Dr. J. H. C. Bonté, of the University of California, than by any one else. To describe them briefly, they are included under the head of excessive drying-qualities. These are marked both in summer and in winter. In the former, vegetation sometimes appears as though it were burnt, and the effect upon both animals and men is striking. Men who have recently arrived in the country, and are robust, are not so sensitive to the wind as residents; and it has therefore been said that the imagination has a great deal to do with it, but this is a mistake. It matters not whether the wind is hot or cold, it produces a feeling of great depression and nervous irritability, lassitude, and restlessness. Some call it the 'poison wind,' and others the 'crazy wind.' The effects produced are similar to those of the 'Puna wind' of Peru, and the 'Hammattan' of Africa. It blows at no regular interval, nor for any known definite periods. There is some local authority, however, for the opinion that some multiple of three has been observed by some of its recurrences. The wind is really vicious only once in eight or ten years; and it undoubtedly has a powerful and favorable effect in drying up the wet soil, and neutralizing the effects of the rank vegetation, in the Sacramento valley after the rainy seasons. Mr. Thompson has, so far, traced its course and width to latitude 42°; and such information as he possesses to date seems to indicate that the wind moves down along the east base of the Cascade range, and thence through the Sacramento and San Joaquin valleys of California. There are numerous theories as to its origin, and the reasons why it produces such marked and peculiar effects.

## *RECENT PROCEEDINGS OF SCIENTIFIC SOCIETIES.*

### Academy of natural sciences, Philadelphia.

*Feb. 12.* — Dr. N. Roe Bradner exhibited an inscribed stone found inside a skull taken from one of the ancient mounds at Newark, O., in 1865. An exploration of the region had been undertaken in consequence of the finding of stones bearing markings somewhat resembling Hebrew letters, in the hope of finding other specimens of a like character. The exploration was supposed to have been entirely unproductive of such objects, until Dr. Bradner had found the engraved stone now exhibited in a skull which had been given to him. The specimen is of a dark reddish material, of a rounded wedge shape, and bears on its surface a number of characters, the significance of which had not been determined, but which resemble the markings on the specimens before discovered. —— Rev. H. C. McCook described the nests of a new species of spider recently received from Mr. W. G. Wright of San Bernardino, Cal., for which he proposed the name Segestria canites. The cocoons hang in strings from the limbs of trees extending over a pathway. They are placed one above the other to the number of eight, and are united by a netting of white silk, covered with the leaves of the neighboring plants. They are kept in place over the path by lines which extend to either side, sometimes to a distance of five feet. Along one side of the suspended nests is a tube, which is inhabited by the mature spiders. As the weaving of nests over pathways leads to their being frequently torn away by passing animals, it had been suggested that the case was an illustration of a weakening of the instinct of preservation. It may, however, be rather a means adopted for the distribution of the species; the spiderlings being doubtless carried to remote points by the animals which tear away the nests. —— Mr. Edward Potts reported that he had examined the fore-bay at Fairmount water-works, from