the Assyrian inscriptions were deciphered, and Professor Vaughan gave the results of a long series of experiments made during the past two years by his students and himself in endeavoring to ascertain the nature of the specific bacterial toxins. An abstract of this paper will be published in SCIENCE.

FREDERICK C. NEWCOMBE.

DISCUSSION AND CORRESPONDENCE.

SIX NEW SPECIES.

TO THE EDITOR OF SCIENCE: There has just come to my attention a copy of the 'Ninth Annual Report of the Ohio State Academy of Science,' for the year 1900. Although apparently published in 1901, it contains one article that is still deserving of wider notice! This is a paper on 'Six new Species, Including two New Genera, of Fossil Plants,' by H. Herzer, the reading of which is calculated to cause mixed reflections, alike to the student of English and the paleobotanist. His first species, quoted entire, reads as follows: 'Palæophycus clavifrons. Nov. Spec. A much ramifying marine weed, shooting at once at sharp angles a number of branches, which at distant intervals multiply again in the same manner. Each branch seems a barren, rugged cylinder, beginning at its outgrowth thin as twine, then assuming a thickening of $\frac{3}{8}$ inch, giving the rather lengthy branches a club-like form.—Sandstone flagging, Harmar Hill, Marietta, Ohio."

Of his 'Caulopteris magnifica, Nov. Spec.,' he says: "Among the numerous silicified remains of plants of the carboniferous age, from Athens County, Ohio, that have been liberated out of the Mahoning sandstone, we find quite a variety of species grouping under different genera, which are by their internal organization closely allied to each other. The great interest in these thus preserved plants is presented in the minute preservation of internal structure by which their classification is greatly facilitated and at once obvious. * * * Our species here is a well-preserved, magnificent treefern, once beautifying the unbroken wilds of its time"!!

"Psaronius junceus, Nov. Spec. As has been shown in one of our former meetings, Psaronius is not a conical stalk of aerial roots, enclosing the base of tree-ferns, but is a plant *per se*. We present the one before us as a new species, having in its central arrangement the structure of a fern or a Sigillaria or likely a Lepidodendron; for all these characters are closely allied to one another; but also being remarkably made up of cellular fascicles, enclosing like individuals that center and joining one another so densely, as to have no interstinct tissue between them. Each fascicle is throughout the whole trunk, which attains the thickness of $1\frac{1}{2}$ in., as thin and slender as bulrushes, from three sixteenths to one eighth inch thick, crowding each other in various angles. In each fascicle is a star-like center of coarse woody cells, surrounded by small circular cells. The main center two inches in diameter and being a pithy cylinder, has the same long vermicular woody bundles as are common to the above mentioned trees."

This is undoubtedly a new species, if not indeed a new order. The absence of 'interstinct tissue' settles that!

The first mentioned of the so-called new genera (*Cystiphycus*) is introduced by the lucid statement that 'Like many other fucoids this species had the same mode of growth.' The other may be quoted entire. "Nodophycus thallyformis [*sic*], a New Genus. The fronds of this seaweed must have been very large. I find them covering large slabs of sandstone. The nodose elevations of the frond are from one third to one half inch apart and look as if a soft thallus had spread over peas"!

The first mentioned 'new' genus is incorrectly formed, etymologically, and both generic and specific words in the other are hybrid Latin and Greek combinations. Can anything be worse?

I submit that not one of these descriptions is adequate or even intelligible, and, with the possible exception of the *Caulopteris*, the figures are as bad. Those illustrating *'Palæophycus clavifrons'* and *'Nodophycus thallyformis'* might, with equal propriety, be used to illustrate a paper on meteorites.

In the name of paleobotanists I protest against such solecisms as these being con-

sidered a part of our science. Paleobotany has legitimate troubles enough of its own without being taxed with this. It is difficult to understand how the publication committee of the Ohio State Academy of Science could have admitted this paper, at least in its present form.

F. H. Knowlton.

GEOLOGICAL EXCURSIONS IN THE PITTSBURGH COAL REGION.

The Pittsburgh meeting of the Geological Society of America and of Section E of the A. A. A. S. was rendered memorable to many geologists by the opportunity afforded them to study the stratigraphy of the bituminous coal fields of Pennsylvania and West Virginia, under such an experienced and enthusiastic guide as Professor I. C. White. About twenty geologists and students assembled at the Pennsylvania station on Tuesday morning, June 24, for the 6.15 train. The first objective point was Garver's Ferry, opposite Freeport, on the Allegheny River. This is the type locality for the Upper and Lower Freeport coals, and these with their accompanying shales, fire-clays and sandy beds were studied. An interesting feature was the occurrence of limestone beds in this coal series, which in some cases lay directly beneath the coal, and in others were associated with the fire-clay. Frequently both fire-clay and limestones were replaced by the sandstones of the series.

The Freeport sandstone underlying the coal series was seen in the river bed. The lowest member of the Conemaugh or Lower Barren series in this region is the Mahoning sandstone group, which often includes a thin seam of coal (Mahoning) and sometimes calcareous beds. The overlying Masontown coal and the red beds higher up, nearly to the horizon of the Crinoidal limestone, were studied in a walk of several miles and a climb up the steep rocky cliffs. This brought before the party the entire lower half of the Conemaugh, up to the horizon of the rocks exposed at Pittsburgh. The upper portion of the Allegheny or Lower Productive series (Freeport coal group) was also included. At Kittanning, further up the river, the study of the Allegheny series was taken up again, and this time nearly the entire series was seen from the Clarion Coal, twenty-five feet above the Pottsville, to the Upper Freeport coal, and also the overlying Mahoning sandstones of the Conemaugh series. Special attention was called to the Ferriferous limestone and the Kittanning coals in this section. Still farther up the river at the mouth of the Mahoning, the greater portion of the Pottsville series as brought up by the Kellersburg anticlinal, was studied. The lower or Connoquenessing sandstone with its included Quakertown coal, and the upper or Homewood sandstone with the intermediate Mercer coal groups, were pointed out.

On the return journey a stop was made at Crag Dell and a short walk along the railroad tracks enabled Dr. White to point out many of the interesting detailed characteristics of the Upper Freeport coal and its associated rocks.

On Wednesday the party visited the interesting region about the junction of the Connoquenessing with the Beaver, and here the Homewood and Upper and Lower Connoquenessing sandstones were studied at their type localities. Some of the lower members of the overlying Allegheny series were also studied, especially the Ferriferous limestone. Later in the day, near Beaver, the Brookville and Clarion coals with the intervening Eagle limestone were seen, thus completing the base of the Allegheny series.

The interesting glacial phenomena along the Beaver, below the terminal moraine, were given special attention, and the evidence of the former impounding of the waters in the preglacial river valleys of the Ohio and its tributaries by the front of the ice sheet, as pointed out by Dr. White, was pronounced very conclusive. Attention was also given to the character of the preglacial valleys, and the high-level terraces on either side of the Ohio and the Beaver, and their gradual descent northwestward, forcibly suggested the former northwest drainage into the Lake Erie Valley of the river systems of this region, as pointed out by White, Hice and others.