

that they appeared to be homogeneous particles of a "molecular weight" of 1,000,000,000 or more.

The crystalline-appearing structures isolated by Stanley are another argument advanced in favor of the non-living nature of the viruses. The biologist, however, need only be reminded of the fact that many colonies of unicellular organisms assume special shapes or forms characteristic of the group of individual organisms making up the colony. Furthermore many bacteria tend to arrange themselves in clusters or in long chains, probably at least in part because of the positive and negative polarity which each cell possesses. We know nothing as to the electrical phenomena which would be associated with naked living nuclei, and it is not beyond the realm of possibility that such electrical phenomena would be manifested by specific orientations and specific space groupings of such naked nuclei.

The hypothesis of naked nuclei would account for the "autocatalytic" reproduction of the virus "proteins." It should be pointed out that Woods,<sup>3</sup> in 1899, concluded that the viruses were enzymes and that they were non-living. Unfortunately for Woods the term "autocatalytic" had not yet been coined so that he could not call the virus an autocatalytic enzyme and thus account for its self-propagation. Had he used that terminology, his description would have been essentially that of the present school who insist on the protein nature of viruses. It should be pointed out, however, that all of the classical autocatalytic reactions which have been studied in the chemical laboratory refer to a tearing down process (a chain reaction) whereby energy is released, and the writer does not know of a single instance of a building-up autocatalytic reaction whereby energy is stored. Therefore, if the viruses are autocatalytic proteins, they represent a type of chemical reaction entirely distinct from systems which have been previously studied.

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#### POSSIBLE LANDSLIP SCARS ON THE BOUQUET RIVER AT WILLSBORO, N. Y.

THE Bouquet River enters Lake Champlain two miles east of the town of Willsboro, N. Y., after having crossed the belt of lower Paleozoic sediments that lie between the lake and the Adirondack Mountains. In places, the river rests upon bedrock as at the bridge at Bouquet, where it exposes the Potsdam sandstone, and at Willsboro, where ledges of the Beekmantown limestone are visible and serve as the foundation of a dam. Throughout a large part of its course, however, the river is not resting on bedrock, but has cut its channel through unconsolidated Pleistocene sands and

is in places flowing on an underlying bed of glacial lake clay.

In the middle of June, 1937, an interesting landslide took place on the east bank of the river about one half mile north of the Essex-Willsboro town line at the point where the river turns westward. For a distance of about five hundred feet, the clay bed of the stream was forced upward, temporarily ponding the flow of water until a new channel was cut in the meadow lands to the west. At this point the east bank rises some sixty feet above the bed of the stream and is made up of Pleistocene sands and clays, while the land to the west is relatively low. At some distance back from the river, on the east bank, a vertical scarp over thirty feet high was produced by the disturbance. Between this zone of slippage and the river, the land was badly broken and dropped vertically in blocks. Trees were uprooted, and one tree six inches in diameter was split up the middle of the trunk for several feet as the ground on one side dropped to a lower level.

Considerable local interest was aroused by this slide, and some of the local newspapers carried articles about the event. Dr. D. H. Newland, New York state geologist, visited the region a few days after the slump and has prepared a paper which will discuss the geology of the landslide.<sup>1</sup>

It is the purpose of this paper to call attention to a topographic feature present along the Bouquet River which might be interpreted in two different ways, either as a river terrace or as the evidence of a former slide.

The writer, who was fortunate enough to be in the region, visited the scene on June 24 and came to the conclusion that the load of Pleistocene sediments on the east bank had caused a displacement along a clay layer at the level of the stream bed and had produced the bulging of the river bottom. Slides of this type have been described from other parts of the Hudson-Champlain valley by Newland,<sup>2</sup> who lists five types of slides and slips which may occur in unconsolidated sediments. His fifth type, "Subsidence of surface from unbalanced pressure upon confined liquid substratum, leading to a reciprocal upward movement at a distance" is the type here represented, and the examples cited by him seem to agree in all major points.

In approaching the area of the recent slide, one crossed a definite well-developed bench about fifteen or twenty feet below the level of the glacial sand plain. The natural interpretation would be that it was a normal river terrace. However, after having seen the results of the slide the question of origin becomes more doubtful, for a bench of this type could well have been produced by a similar slide at some much earlier date.

<sup>3</sup> A. F. Woods, *Centr. Bakt. Parasitenk.*, 2: 745-754, 1899.

<sup>1</sup> D. H. Newland, Personal communication, 1938.

<sup>2</sup> D. H. Newland, *N. Y. State Museum Bull.*, 187, 1916.

The top surface of the bench would, under these conditions, represent the surface of the sand plain lowered to its present position by the subsurface flowage of the underlying clay bed. Any evidence of the clay bulge in the river channel could long since have been ruined by the river.

The fact that slides of this type have occurred in the past in the valley of the Bouquet River was substantiated by a talk with Dr. Stafford, a physician at Essex, who said that a similar one had occurred near Whallonsburg about seventy-five or eighty years ago.

It is therefore suggested that people working in regions of unconsolidated sediments where the same type of subsurface conditions exist, give careful consideration to this alternative before they described occasional benches as river terraces.

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### HATCHING OF THE EGGS OF THE "FAIRY SHRIMP"

BECAUSE of their occurrence always in temporary pools which are dry during the summer months the belief has arisen that the eggs of the "fairy shrimp" *Eubrachyus vernalis* will hatch only after a more or less prolonged period of desiccation and possibly only after they have been frozen. To my knowledge there is for any of the American species of this genus no record of their hatching having been observed under laboratory conditions. Although others have recorded the hatching of the eggs of related European forms without their having been dried,<sup>1</sup> it is of some interest to record the hatching of *Eubrachyus* eggs under laboratory conditions which have precluded the possibility of drying or freezing, even if the instance was entirely accidental and only one specimen was observed which attained a size which made it clearly recognizable as this form.

In March, 1937, mature *Eubrachyus*, the females bearing eggs, were placed in an aquarium used for the "conditioning" of tap water for use in other cultures. About three fourths of the water had been withdrawn from this aquarium at intervals of approximately two weeks for use in other cultures. These animals died within ten days, releasing eggs before or at the time of death. In late January of this year a single specimen fully a centimeter in length was discovered in this aquarium. It was observed daily over a period of about three weeks until it died, no apparent growth having taken place in that interval. It is not surprising that more individuals were not found, if more were hatched, as no care is taken in siphoning off water to see that small swimming forms are not removed. It is rather surprising that this individual remained and found sufficient food for growth to the size observed. The development of this form is known to be through a nauplius stage,<sup>2</sup> and to attain the size and degree of development observed hatching must have taken place a number of weeks previously, near to the time believed to occur for individuals in nature in this latitude.

Factors which induce the hatching of Phyllopod "resting" eggs are obscure. It is known for some Cladocera<sup>3</sup> that changing the culture medium sometimes induces resting eggs to hatch without the expected period of dormancy found in nature. It may be that the periodic changing of water was of importance in this instance. There is no evidence in this case of any factor which might induce hatching prior to the normal resting period of some eight months that occurs in nature. It seems clear, however, that drying or freezing are not indispensable factors, as the possibility of either is precluded in this instance.

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## SOCIETIES AND MEETINGS

### THE FIFTIETH ANNIVERSARY OF THE AMERICAN ASSOCIATION OF ANATOMISTS 1888-1938

ON the 17th of September, 1888, in response to the invitation of Dr. Alex. H. P. Leuf, of Brooklyn, who had lately moved to Philadelphia, fourteen gentlemen attending the Congress of American Physicians and Surgeons in Washington, met at Georgetown University and organized the American Association of Anatomists. "Eminent professors declared that this new society was not needed; while others were convinced that it would be a difficult matter to fill the necessary offices." Fifty years have passed; and on April 14 to

<sup>1</sup> Mathias, *Bull. Soc. Zool. France*, 54: 342-344, 1929.

16, the association, now the largest of the national anatomical societies, with a membership exceeding 600, celebrated its jubilee, at the University of Pittsburgh.

At the opening session, the large auditorium of the Mellon Institute was filled to capacity as six former presidents reported their current investigations, indicating something of the range of interests now comprised under "anatomy." First, Dr. Harrison, experimenting on *Amblystoma*, analyzed four factors concerned in the normal development of the ear—epidermis, mesoderm, hind-brain and position of the rudiment—assigning to each its relative importance.

<sup>2</sup> Dawydoff, "Embryologie des Invertebres," 1928.

<sup>3</sup> Wood and Banta, *Intern. Rev. d. gesamten Hydrobiologie und Hydrographie*, 35: 229-242, 1937.