columns. Silliman's Fossil Mount is in 63° 43′ north latitude and 69° .02′ west longitude. It stands at the head of the bay, about 300 feet from high tide and two and one half miles south of Jordan River. It is a hill of horizontally bedded limestone which lies unconformably on the hills of Meta Incognita. It is about three fourths of a mile long and 320 feet high (by aneroid) and runs in a general northwest and southeast direction. The entire mount, so far as its stratigraphy[4] is known, is of Middle Ordovician age. It is significant to note that the mount is the only sedimentary deposit in place that has been found in the entire region of the bay, which is nearly 150 miles long and about fifty miles wide at its entrance from the Davis Strait. The existence of such an isolated hill of Ordovician age is at once interesting and problematic. It has been suggested by previous explorers[5] that the mount is an accumulation of glacial drift. The fact, however, that the limestone is horizontally bedded is evidence enough that it must have been a deposit in place. The chronology of the geologic history of Frobisher Bay will be discussed in a later paper. For the present, it suffices to say that Silliman's Fossil Mount is either a remnant of erosion of the deposits laid down by the Ordovician and later seas on the irregularly eroded Archean surface or it is the result of erosion of sediments from graben developed during post Ordovician-Devonian faulting.

The columns observed by the writer are few in number and occur only in the uppermost beds at the southeast end of the mount. They vary in width and in the number of faces. The columns stand approximately perpendicular to the bedding plane, although some lie at an inclination of several degrees. Disintegration of the columns appears to be very rapid. In fact, talus has reached within fifteen feet of the summit. The limestone composing the column is of buff color, slightly brownish when freshly fractured. It is fine-grained and compact, and when dissolved in acid leaves a small amount (10 per cent.) of argillaceous residue. Although fossiliferous, it seldom yields small fossils. Large cephalopods and gastropods are its principal fauna.

[4] Charles Schuchert, "On the Lower Silurian (Trenton) Fauna of Baffin Land," *Proc. U. S. Nat. Mus.*, Vol. XXII, Washington, 1900. The writer has made an extensive collection of fossils at Frobisher Bay, conclusions as to the stratigraphical significance of which will be published at a later date.

[5] Since Sir Martin Frobisher discovered the bay in 1576, Silliman's Fossil Mount has been visited by four parties: Charles F. Hall (who discovered and named the mount) in 1861; five members of the Seventh Peary Arctic Expedition in 1897; eight members headed by Russell W. Porter in 1898, and three members of the Rawson-MacMillan Expedition for Field Museum in 1927.

These columns can not be ascribed to concretionary action. There is no evidence of concentric lines on their cross-section surfaces. Neither can they be ascribed to mud-cracks, since no filling material adheres to their adjacent faces. Again, as a rule, the fissures between columns resulting from mud-cracks diminish downward and terminate abruptly upward. In cross-section, mud-cracks are wedge-shaped (unless the walls of the cracks are parallel) and columns originating from them are likely to correspond with the walls and be wedge-shaped.

In the view of the writer the irregular columns in the limestone at Silliman's Mount are the result of a joint system developed from tensional forces acting during the uplift of the area. Joints producing cubical blocks in stratified rocks have two directions, vertical and at right angles. In this case there is an additional diagonal direction which does not lie in the line of intersecting points of the vertical and right-angled joint planes. In such a joint system there will be a series of columns having from three to six faces. Ordinarily the three-sided columns (being thinner and more angular) will disintegrate first separating the other columns and somewhat increasing the columnar effect of the strata.

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FORESTS AND PRECIPITATION

THE relation of forests to precipitation has given rise to much discussion but has called forth relatively few facts. The following observation seems therefore worth presenting because it is definite.

On July 4, 1929, the writer was motoring through north central France, between Paris and Tonnerre, a region intensively cultivated but containing patches of forest of varying size. Most of the forests are of oak and beech, managed under the system known as coppice under standards. The trees are not tall, the standards not over thirty to forty feet in height and the coppice less. The day was one of local showers, bright sun one moment, then a shower, then sun again. Not infrequently it would rain while the sun was shining. Most of the showers were rather light, but in the middle of the afternoon the rain fell very heavily for about ten minutes and then stopped abruptly. Further on, somewhere beyond the city of Sens, we noticed with surprise that the road was dry and that no rain had fallen, at least for a number of hours. In this dry area the road passed through the outer edge of two small forests, and in both cases *the road through the forest was wet from recent rain, and dry outside the forests.* The line of demarcation was very distinct, and showed that *the precipitation had fallen*

only on the forest, not on the adjacent cultivated fields which were covered with various growing crops, mostly wheat, headed out but green.

It is well known that the summer temperature in forests is lower than that in the open. This lower temperature occurs not only within the forest itself, but also extends for some distance above the forest. Just how high the cooling effect is exerted is not known, but the writer was informed in 1908 that French army officers, in passing over a forest in a balloon, noticed the cooling to such an extent that ballast had to be thrown out to keep the balloon from descending too much. Obviously, then, under certain atmospheric conditions, moisture-laden winds which pass over open country without giving rain will cause precipitation to fall as they pass over forests.

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THE INTERNATIONAL GEOLOGICAL CONGRESS IN PRETORIA AND A GEOLOGICAL MAP OF THE WORLD

FROM July 29 to August 7 there will be held in Pretoria the International Geological Congress. This congress is bound to prove of the greatest interest to all the peoples of the world. Besides other important matters, it deals with the first geological map of the entire earth.

The manner in which this truly comprehensive work came into being is very noteworthy. The first International Geological Congress, which was held at Bologna in 1881, requested the Prussian Geological Survey in Berlin to prepare an international geological map of Europe. This enormous map, constructed on a scale of 1 to 1,500,000, or one millimeter to one and one half kilometers, and executed in forty-nine sheets, was recognized to be an achievement of such importance in the field of geological cartography that the Prussian Geological Survey was entrusted with the construction of an international geological map of the world. The work, however, was completely suspended by the rupture of international relations in consequence of the war. But, on the occasion of the International Geological Congress held at Madrid in 1926, the Prussian Geological Survey was entrusted both with the issue of a fresh edition of the map of Europe and with the production of a geological map of the world on the scale of 1 to 3,000,000, or one millimeter to three kilometers.

Since that time difficult preparatory work has been done. In February of the present year, the International Cartographic Commission met in the Prussian Geological Survey under the chairmanship of President Krusch for the purpose of determining various particulars, such as the colors to be adopted, etc. So far the following countries have promised their cooperation: France, Russia, Switzerland, Denmark, Sweden, Czechoslovakia and certain South American states.

The geological map of the world, with its eighty sheets (forty for each hemisphere) will provide an accurate presentation of the rocks forming the surface of the earth; it will indicate their age; it will show the various faults and folds in the earth's surface, and it will give information as to the ocean depths. For the construction of the map, use is being made of the various special maps existing in the various countries, as well as of all the literature available concerning the character of the earth's crust. So far the first two sheets of the new map of Europe (Germany and the Alpine countries), as well as the first two sheets of the World Map—namely, Southwest Africa—have been completed; they will be laid before the congress in Pretoria by Professor Dr. Krusch, the president of the Prussian Geological Survey.

Professor Krusch, who is at the head of the German delegation, is well known as an authority on ore deposits. He will lecture to the congress on the various theories concerning the origin of rock-oil. The German Reich takes a lively interest in the work of the congress at Pretoria because decisions are expected there concerning comprehensive international scientific work.

Other members of the German delegation are Professor Kloss, of Bonn University, known for his investigations of granite, and Professor Kaiser, of the University of Munich, famous for his studies of South African geology. Dr. Schriel, the expert in whose hands lies the actual production of the two geological maps, and Dr. H. Reich, the geophysicist, also take part in the congress.

Pretoria has been selected as the meeting-place of the geologists because, as the center of some most remarkable mineral deposits, it offers experts a number of extremely interesting excursions. Some striking examples are: the platinum deposits in the neighborhood of Witwatersrand recently discovered by Herr Merenski, a German practical geologist; the new diamond fields in the Orange Delta, and the rich gold deposits of the whole district.

CARLO VON KÜGELGEN

JULY 1, 1929

THE PHYLUM IN ZOOLOGY AND PALEONTOLOGY

IN connection with a recent discussion between Dr. Austin Clark and myself, may I point out that the term "phylum" used in zoology to designate the major branches of the animal kingdom has an equally wide use in paleontology to designate what he calls "linear