orders, anemia and questions of public health, medical practice and medical economics are on the program in addition to general sessions devoted to varied topics. Special clinics and demonstrations at the Johns Hopkins University School of Medicine, the University of Maryland School of Medicine, and various Baltimore hospitals are to be given each afternoon of the meeting, from Tuesday to Friday, inclusive. Features of the Washington program are lectures at the U. S. Naval Medical School and at St. Elizabeth's Hospital; clinics and demonstrations at George Washington University School of Medicine, Georgetown University School of Medicine, Mt. Alto Hospital and Children's Hospital; demonstrations of arthritis and syphilis from the anthropological collections of the Smithsonian Institution, and visits to Walter Reed General Hospital, the Army Medical Library and the Army Medical Museum. Among speakers who will present papers are Drs. William S. Thayer, Warfield T. Longcope and Lewellys F. Barker, Baltimore; Henry A. Christian, George R. Minot and Frank H. Lahey, Boston; Ray M. Balyeat, Oklahoma City; Cyrus C. Sturgis, Ann Arbor, Mich.; Gabriel Tucker, Philadelphia; George E. Follansbee, Cleveland, and David P. Barr, St. Louis.

DEEDS conveying over 840 acres in the northern section of Durham County to North Carolina State College were filed January 28 by George Watts Hill, '22, of Durham. The property will be used by the Forestry School, and is considered one of the most important gifts ever made to the forestry division.

THE Polytechnic Institute of Brooklyn has received the sum of $250,000 in payment of the legacy left to the Institute by the late Dr. William H. Nichols, chairman of the Board of the Allied Chemical and Dye Corporation. Dr. Nichols, who was one of the founders of the American Chemical Society, was a graduate of the Polytechnic Institute in the class of 1868 and was for forty years a trustee of the corporation, serving as its chairman for eighteen years.

DISCUSSION

MORE EVIDENCE OF MAMMOTHS IN THE HIGH MOUNTAINS OF COLORADO

IN SCIENCE of July 18, 1930, the writer called attention to evidence of mammoths and giant bison in the high mountains of southern Colorado. Since writing this note, more evidence of a similar character has come to light in other localities, and extending this range nearly to the northern end of Colorado, along the high front ranges.

A ranchman living near Canon City, Colorado, showed the writer a fairly complete upper molar of a mammoth, which agreed closely with the typical *Parelephas columbi* in having 19 plates, and similar structure. The tooth had originally been well preserved when found; but exposure and lack of proper care had so softened it that it was crumbling, and nearly ready to fall to pieces when examined. The owner, who did not care to part with it, stated that while working in a road cut, "a few miles out of Cripple Creek" on the little used road leading down Phantom Canon to Canon City, and "near the top of the divide," in an old gravel bed far above present wash, he had dug out this tooth. The spot he described is stated to be at an elevation of "above 8,000 feet." He said that he also found at the same spot some big broken bones, some inches in diameter; but that these had soon gone to pieces after he took them out. He did not know that the specimen I examined was a tooth, but had thought that it was a "queer rock formation"; and as it was found near a famous gold locality, he had saved it, not knowing what it might "indicate"!

A second, broken tooth, apparently the same species, which had been found by a local workman in South Park, Colorado, was carefully examined. It was stated that this tooth was dug out of a gravel bed, near the lower end of South Park; and that the gravel lay at this spot on "a sort of shale" in which had been found "fossils that looked like fish." From other sources I have heard from time to time of large fossil bones occasionally found in South Park, of such a size as to suggest mammoth. This tooth which I saw in South Park, near where it was said to have been found, would seem to confirm the occurrence definitely.

A third specimen, also in the hands of a workman, consisting of four plates from a freshly broken mammoth molar, which was, as nearly as could be told from such a fragment, of the same type as the foregoing, was shown to me by its finder, who reported obtaining it from gravels in a cut. This cut is one made during the construction of the new highway up the Cache la Poudre valley over the high mountains into North Park, Colorado. The writer was informed that this tooth was found in a gravel cut less than half a mile from the crest of Cameron Pass. In this event, this record would be from an altitude of nearly or quite 10,000 feet. The writer has noted deposits of coarse rock and gravel, probably mostly of glacial origin, in this vicinity, but has done no work upon them there.

Still another mammoth molar, this time a lower, was shown the writer, while on a deer hunt, by a miner near Breckenridge, Colorado, who stated that it had been found in placer gravels within five miles of that town. Again, it was apparently from the same species, as nearly as could be determined in its damaged state; and this was found at an altitude probably well over 10,000 feet, as nearly as we could judge from known elevations, and without instruments or other means of readily determining the altitude in the time available. It is probable that the scarcity of any but most fragmentary remains, in such deposits, in these high altitudes, is due to the coarse materials generally present, which would tend to grind and crush all bones not most favorably protected; and also, the comparative scarcity of any other type of sediments in these high mountains, which are being exposed by erosion or otherwise, at this time, in deposits which might be expected to produce such remains, rather than to suppose that mammoths were necessarily scarce in the region, when present.

These finds were not seen in place by the writer, so that no detail of the deposits, beyond that given, is possible. The general facts of the occurrence are, however, believed to be reliable. Added to the information previously given, these instances seem to indicate clearly that mammoths of this sort once ranged the high mountain ranges of Colorado; and the specimens seen seem to indicate an early race of the Columbian mammoth. This would seem to point to relatively early Pleistocene times. It will be interesting, when more data has been collected, to learn more of the precise dating of these occurrences. It may throw light on a number of questions of importance. The instances cited are too incomplete to give much desirable data; but they are recorded in the hope that it may cause others, who have the opportunity to visit these interesting regions, to be on the watch for more discoveries, or for new information that will add to our knowledge of these problems.

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BEACH SANDS OF THE ATLANTIC COAST

RECENT investigations of certain of the Atlantic Beach sands of the United States have disclosed some interesting facts. About 120 samples with a geographical range from the northern end of Long Island to Georgetown, S. C., were studied. Most of these samples were obtained through the cooperation of the U. S. Coast Guard Service; the remainder, except in one or two instances, were collected by the investigator. It is planned to extend this study to the sands farther south if enough samples from the coasts of South Carolina and Georgia can be obtained. One of the graduate students in the department of geology is now carrying on a petrographic study of certain selected samples of the sands already collected, but, inasmuch as this work is very time-consuming and will not be completed for some months, he plans to publish the petrographic work as a separate paper at a later date.

In the course of the present study the sands were subjected to a careful mechanical analysis, to a preliminary microscopic examination, and $CaCO_3$ determinations were made. The localities were studied through various maps and charts, chiefly those of the Coast and Geodetic Survey, and in some cases were visited. While the results of this study will appear elsewhere in full, certain conclusions seem to warrant brief mention at this time.

1. The coast may be divided into several rather distinct sections so that the sands of any one section show close relationships in respect to grain size, $CaCO_3$ content, mineralogical composition, etc. These divisions of the coast are, in the main, limited by natural breaks in the continuity of the beaches, *e.g.,* New York Harbor, Chesapeake Bay, Delaware Bay, etc.

2. The general movement of the sand appears to be southwestward along the coast in accordance with the usual conception, although the direction of drift seems to be in places reversed so that for comparatively short distances the movement is in the opposite direction.

3. There is rather strong evidence that the *effective shore currents* near the mouths of large bays and estuaries move toward such openings even if this involves a local reversal of the general drift toward the southwest. It appears most probable that this effect is caused by the action of tidal currents sweeping in and out of such openings.

4. While in general the sand at any one locality seems to have been transported there from a more northerly region, there is considerable evidence that a portion at least has been supplied locally. In several instances evidence of offshore submarine erosion with deposition on the beaches has been found.

5. In almost all cases each sample shows a very regular distribution of grain size implying that the entire sample has had approximately the same history during the immediate past, although in a few cases the size-distribution curve shows a double peak which would seem to indicate that such a sample might be composed of two different lots of sand which had been intermingled on the beach.

6. North of Caffeys Inlet the $CaCO_3$ content of the sand is almost negligible, never rising above 0.6 per