

ancient than those upon the northern side: their exposed position has simply hastened their destruction.

Late in the season some of the party visited and made a survey of the Pueblo of Jemez, situated upon a creek of the same name, a small tributary of the Rio Grande. An accurate ground plan was made, corresponding in every respect to the plans made in previous years of the pueblos of the Little Colorado.

At various times during the progress of the field-work, opportunities were afforded of making studies of Navajo architecture. These Indians build a house of a rudely conical form, composed of brush and earth upon a supporting framework of timber; and their 'hogans' are of considerable interest, and throw much light on primitive house-construction. While the party was at Keam's Cañon a large number of these houses were examined, under the guidance and with the help of some of the best men in the tribe. No less than five distinct types of structures were found, although the details of construction are minutely prescribed and rigidly adhered to. The 'hogans' always front the east; and the erection of one is an important and a sacred event to those interested, being accompanied by many ceremonial observances and an elaborate ritual.

The material collected during the field-season will be incorporated into reports now being prepared by the Bureau of Ethnology.

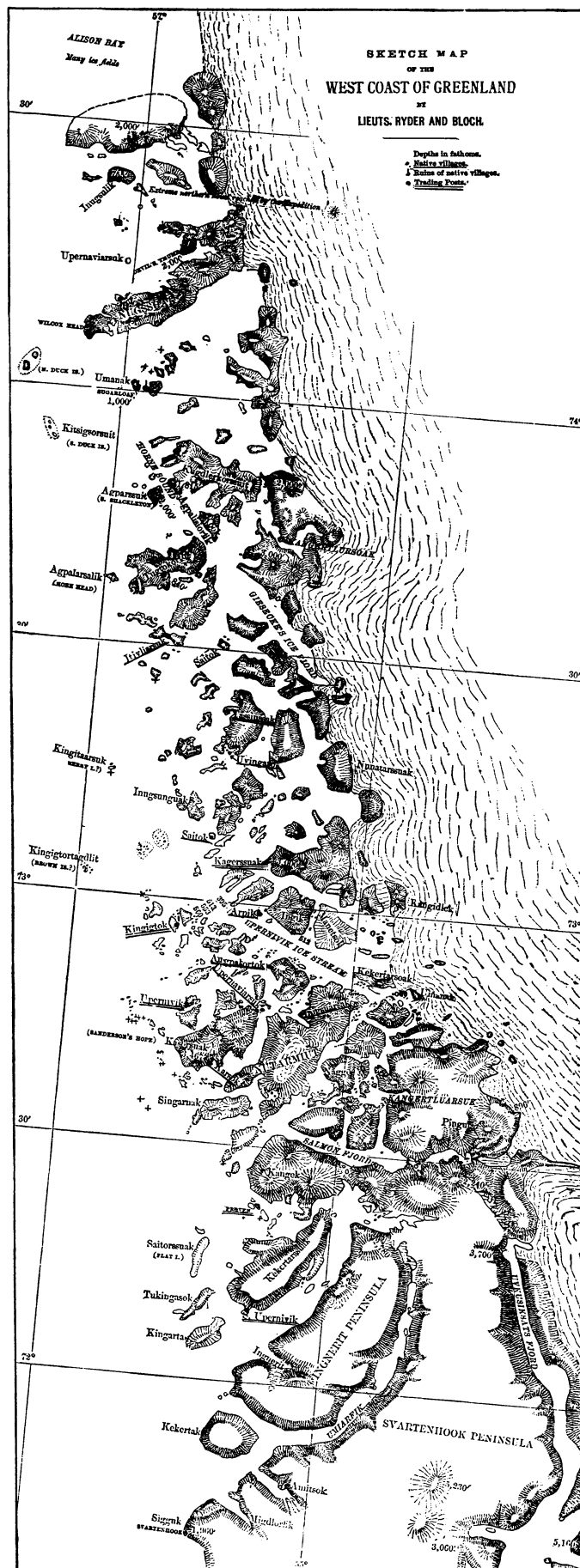
EXPLORATIONS IN GREENLAND.

In the year 1886 the Danish Government sent out an expedition for the exploration of the region of Upernivik and Tassiusak, which had hitherto been almost unknown. Lieutenants Ryder and Bloch wintered in Upernivik, and intended to set out early in spring on an expedition northward. Unfortunately the winter proved to be very severe, and the dreaded dog's disease swept away the dogs of the natives, compelling the explorers to start as soon as the increasing daylight permitted, as the dogs were wanted for sealing in April and May. On Feb. 21, 1887, they left Upernivik, and on the following day arrived at Tassiusak, the most northern trading-station. Here they procured a few dogs, and continued their northward journey, the thermometer ranging constantly under the freezing-point of mercury. As the Greenlanders did not build snow-houses, travelling was very difficult, and the explorers as well as their Eskimo companions suffered severely from frost-bites. The difficulties were increased by deep snow; and as no ice-bears were met with, on which the travellers had to rely for dog's food, they were compelled very soon to turn back. The failure of this expedition to reach the northern parts of Melville Bay is to be greatly regretted; but its results show that an exploration of the coast by means of dog-sledge, and early in spring, is not at all difficult.

The travellers reached Upernivik in March, and in April explored the large fiord east of the colony. Here the velocity of the glacier which empties itself into the sea was measured, and found to be thirty-three feet, while in August it amounted to ninety-nine feet in twenty-four hours. This result is very remarkable, as measurements of the southern glaciers show a comparatively uniform velocity throughout the year.

On May 7 the first sign of open water was seen on the western horizon; on May 23 the first whaler made his appearance on the outside islands; but the harbor of Upernivik was not open until June 11. This was considered a late date for the breaking-up of the land-ice on the Greenland coast; while in Melville Bay it lasted well into July or August, and on the west coast of Baffin Bay even until late in August. On June 26 Lieutenants Bloch and Ryder made another start northward with two boats. Their progress was greatly retarded by the prevailing fogs, while drifting icebergs made travelling dangerous. On Aug. 4 they reached their extreme northern point in $74^{\circ} 25'$ north latitude. The sea farther to the northward was covered with ice; and as the homebound vessel, which the travellers were instructed to take at Upernivik, left on Aug. 15, they were obliged to return.

Among the results of this journey one is of great interest, — the fact that even the extreme northern point reached by the expedition is inhabited by Eskimo, who visit it every spring. The most northern native village is Itivliarsuk in $73^{\circ} 30'$ north latitude; but



farther north numerous ruins of villages were found, and the Eskimo had names for every point and island. Thus it appears that the distance between the North Greenlanders and the inhabitants of Smith Sound is not so great as was generally assumed, and it becomes very probable that intercourse between these tribes in a limited degree existed not very long ago, or maybe still exists.

SCIENTIFIC NEWS IN WASHINGTON.

Collectors and Collections of Jewels and Precious Stones : an Interesting Chapter by George F. Kunz. — A Steel 'Vacuum' Balloon : the Absurd Proposition of a Scientific Crank indorsed by a Committee of Congress. — Death of Prof. E. B. Elliott : a Great Loss to Science. The Tape-Worm in Sheep.

Collections of Jewels and Precious Stones.

THE following is an extract from a paper lately prepared by Mr. George F. Kunz of Tiffany & Co., New York, which will be used as the basis of a report on precious stones, which will appear in the volume on 'Mineral Resources of the United States,' to be issued by the United States Geological Survey a few months hence : —

"A regrettable dispersion of jewels and precious stones took place on May 12 and 14, 1886, when the famous collection formed by the late Henry Philip Hope, and exhibited at the South Kensington Museum for many years, was sold at auction. The Hope collection included the *saphire merveilleux* of Madame de Genlis's 'Tales of the Castle ;' the King of Candy's cat's-eye, the largest known, having a diameter of an inch and a half ; the Mexican sun-opal, carved with the head of the Mexican sun-god, and historically known since the sixteenth century ; an enormous pearl, the largest known, weighing three ounces, and two inches in length ; the aquamarine sword-hilt made for Murat, King of Naples ; and also many curious diamonds, sapphires, emeralds, and several hundred unique and magnificent gems. Such a collection should be preserved intact as a national possession.

"In 1886 it was decided by the French Assembly that the crown jewels, with the exception of the famous 'Regent' diamond, two of the mazarines, and a few historic pieces reserved for the national museums, should be sold at public auction. These exceptions were made because it was feared that they would fall into the hands of Americans. The sale of this great historic collection took place in May, 1887. The 48 parcels were subdivided into 146 lots ; and there were 68 buyers, 12 of whom bought over 1,000,000 francs' worth each. The largest lot, the great corsage, which sold for 811,000 francs, was purchased by a single American firm, the largest buyer at the sale. The purchases of the firm amounted to 2,249,600 francs, or about 34 per cent of the entire sum realized ; while as to quality, the same firm obtained more than two-thirds of the finest gems. Among them were the three mazarines ; a pear-shaped rose brilliant, weighing $24\frac{3}{4}$ carats, for 128,000 francs ; a pear-shaped white brilliant, weighing $22\frac{1}{2}$ carats, for 81,000 francs ; a white brilliant, weighing $28\frac{1}{8}$ carats, for 155,000 francs ; and an oval brilliant, weighing $18\frac{3}{4}$ carats, for 71,000 francs ; or 435,000 francs for the four. All but one of their purchases were secured by private American customers. The great interest attached to this sale was due not only to the fact that many of the gems were of very fine quality, but also to their historic associations. The history of many of them could be traced back several hundred years. In its way this sale did more than any thing that had before occurred to establish a reputation abroad for American taste, wealth, and enterprise.

"The collection of antique gems, numbering 331 pieces, formed by the Rev. C. W. King of Trinity College, England, the greatest of all writers on engraved gems, was sent to the United States for sale in 1881. This collection represents the keystone and the summing-up of Mr. King's vast knowledge, and none has ever been more thoroughly studied. His numerous writings mark an epoch in the study of this branch of archæology ; and only the loss of his sight led him to part with his treasures. The growing interest and taste in archæological matters in the United States induced him to send it here to be sold intact. In October, 1881, through the friendly mediation of Mr. Feuardent, it was purchased, and presented to the Metropolitan Museum of Art, by Mr. John Tay-

lor Johnson, then president of the museum, where it has since reposed.

"Near it will be placed the Somerville collection. Mr. Somerville, a Virginian by birth, and a gentleman of fortune and artistic tastes, while spending the past thirty-two years of his life in Europe, Asia, and Africa, has collected cameos, intaglios, seals, and other historical gems ; and, as a result of his liberal expenditure of time and money, he is to-day the owner of one of the most unique and valuable collections of engraved gems in the world, numbering over 1,500 specimens, including Egyptian, Persian, Babylonian, Etruscan, Greek, Roman, Aztec, and Mexican glyptic or jewel-carving art. All of these are represented by specimens of singular excellence, affording us a panoramic view of the achievements of civilized man in this direction. This remarkable collection, now at his home in Philadelphia, has been loaned to the Metropolitan Museum of Art, New York, where it will soon be placed on exhibition, and the public will be afforded every facility to study the beautiful achievements of the glyptic art.

"Of greater antiquity and archæologic value, because representing a period before gems were cut in the form of intaglios, is the collection of the Rev. W. Hayes Ward, consisting of 300 Babylonian, Persian, and other cylinders. Two hundred of these he himself collected in Babylon and its vicinity, and sold to the museum at a nominal figure. Since that time he has collected 100 more cylinders. Many of them date from 2500 B.C. to 300 B.C., and are cut in lapis lazuli, agate, carnelian, hematite, chalcedony, jasper, sard, etc.

"The death of Dr. Isaac Lea of Philadelphia, which occurred Dec. 19, 1886, in his ninety-fifth year, robbed the world of a great investigator in the field of precious stones. During the last twenty years of his exceptionally long and useful life, he devoted almost his entire time to studying the microscopic inclusions in gems and minerals ; and the cabinet he left contains thousands of specimens of rubies, sapphires, chrysoberyls, tourmalines, garnets, quartz, etc., all of which he had subjected to the most rigid microscopic scrutiny, noting every interesting fact on the accompanying label. Only a small part of his work on this highly interesting subject has been published by the Philadelphia Academy of Sciences, in two papers (in 1869 and 1876), but Dr. Lea made ample provision in his will for the publication of the remainder. His extensive collections of minerals and shells were bequeathed to the National Museum ; and the gem-collection, to his daughter, Miss Lea. Two months before his death, I spent two hours with him, examining a series of quartz inclusions, over which he worked with all the enthusiasm and brightness of youth.

"One of the many benefits traceable to the New Orleans Exhibition was the appropriation given to the National Museum for their exhibit. This was wisely expended by Prof. F. W. Clarke in the purchase of a complete series of precious stones, many of which, although not expensive, are still the finest in the United States, from an educational standpoint. Since the exposition many fine specimens have been added by purchase and donation, especially the diamonds and pearls presented by the Iman of Muscat to President Buchanan, consisting of 138 diamonds and 150 pearls, all of good quality. The collection numbers about 1,000 specimens, and embraces almost every known variety of precious stone, many of them in very fine examples."

A Proposed Steel 'Vacuum' Balloon.

The committee of the House of Representatives on acoustics and ventilation has actually reported favorably a bill appropriating seventy-five thousand dollars to subsidize a man who thinks he can construct a steel 'vacuum' balloon of great power. He is to be allowed to use the facilities of one of the navy-yards for the building of his machine, and is to have the money as soon as he has expended seventy-five thousand dollars of private capital upon his air-ship.

One of the mathematical physicists of Washington was asked by a member of Congress whether such a balloon could be successfully floated. He set to work upon the problem, and here are some of his results, which are rather curious : —

A common balloon is filled with hydrogen-gas, which, being lighter than air, causes the balloon to rise and take up a load with it. But, as the pressure of the gas within is equal to the pressure