

shrouds the lower limbs of the mother. It is of the same general characteristics as that covering the body in Fig. 1.

Fig. 4 represents the body of a younger woman, although less perfectly preserved. She has small delicate features, very small hands and feet, and the instep is highly arched. On part of the head is found long, fine black-brown hair. It comes off readily, half of it having already fallen out. From the appearance of the mammæ and nipples, I should say she had born children. The pelvis is large and well formed.

The cranial, throacic, abdominal, and pelvic viscera have not been disturbed in any case. No violence has caused death; and why these five remains of ancient civilization should have been placed side by side in a stone sarcophagus, five thousand feet up in a cave, must remain a matter of speculation for the present. Perhaps they all belonged to one family, — father, mother, and child, with husband and daughter or son and wife.

The heads are well shaped. The measurements of their skulls would place them among the meso-cephalic, or intermediate between the dolicho- and brachy-cephalic. The face is oval, high cheek-bones, long eyes sloping outwards, the fleshy lips and nose rather flat and wide. In my judgment, these are bodies belonging to a period not less than four or five hundred years ago. The owner of these bodies, Mr. Joel Docking of San Francisco, is going to place them in one of the large museums of the world.

WINSLOW ANDERSON, M.D.

EXPLORATION AND TRAVEL.

New Guinea.

SINCE the Germans have taken possession of the eastern part of the north coast of New Guinea, and the island has been divided by treaties among the Dutch, English, and Germans, explorations are carried on very vigorously. It is only a few years since d'Albertis discovered the upper part of the Fly River, and thus was the first to enter the interior of the large island for a considerable distance. Since that time English missionaries have been very active in the exploration of the south coast. Of prime importance is the work of Rev. J. Chalmers, who knows the natives probably better than any other white man. His remarks on the distribution of a light and a dark colored population of New Guinea, the former of whom he considers Malaysians, the latter Papuans, are of great interest. He states that the former, on their migration from the north-west, located between the Papuan aborigines (*Proc. Roy. Geogr. Soc.*, 1887).

The Australian colonies take a particular interest in the exploration of the island, as they are watching with jealousy the attempts of the French and Germans to gain a foothold in the Pacific Ocean. Since the close of 1885 they have equipped several expeditions, but so far they have not been very successful. In 1885 the small steamer 'Bonito' was sent out to explore the high mountain-ranges in which the Fly River has its source; but this attempt failed, as the steamer was in the hands of an unskilled captain. The only geographical result was the exploration of a small tributary of the Fly River, though the cost of this expedition was about eighteen thousand dollars.

In 1886 the well-known traveller H. O. Forbes set out to explore the Owen Stanley Mountains in the south-eastern part of New Guinea; but unfortunately he arrived on the island in the rainy season, when travelling is impossible, and later on he had to give up his intention on account of lack of means. The project has, however, been taken up again, and Mr. Vogan, the curator of the Auckland Museum, and Mr. Cuthbertson, are about to start on a journey from the south coast to Huon Bay.

Besides these attempts, which have so far had no important results, a great number of successful explorations have been carried out. The *Deutsche Kolonialzeitung* reports that a private expedition was sent by a Sydney house to the Gulf of Papua. The steamer 'Victory' reached Aird River at the northern extremity of the Gulf on March 21, 1887, and ascended the river for eighty miles. Its delta is very extensive, and was partly explored by the steamer. The river was called Douglas River. The 'Victory' returned and discovered another large river near Bald Head. It received the name of Jubilee River, and was found navigable for one hundred and

ten miles. Even at this point it was three hundred yards wide and from two to five fathoms deep. Unfortunately no map of this survey has been published so far, and therefore these discoveries could not be inserted in our sketch-map.

New discoveries in the region of Baxter River were made by J. Strachan, who explored part of the river-branches forming the delta of Fly and Baxter Rivers. The same traveller has been exploring the southern coast of Dutch New Guinea, and reports the discovery of a narrow channel leading from McClure Gulf to Geelvink Bay; but Mr. Wichmann remarks justly in *Petermann's Mittheilungen*, that the correctness of this discovery must be doubted, as A. B. Meyer, who travelled over the isthmus, states expressly that there is no connection between the bays.

The best surveys made in New Guinea during the last years are those of the officers of the New Guinea Company and of German men-of-war visiting these coasts. In these parts of our map will be found the most important and most extensive alterations, as compared to former maps. The coast from Humboldt Bay to the southern boundary has been resurveyed for the greater part, and the results have been published by the New Guinea Company (in *Nachrichten über Kaiser Wilhelms-Land*). From these publications we have taken the course of Augusta River and the coast-line. South of Cape della Torre another river was discovered which was called Otilie River, but it could not be followed to any distance on account of its shallowness: it carries a great volume of water, and may be ascended by a steamer of three or four feet gauge. The course of these rivers shows that the high part of New Guinea is formed by a narrow range of mountains which begins at Geelvink Bay and continues throughout the island to its south-eastern point. The banks of the rivers are inhabited by natives, large villages being found on their upper parts. It will be of great interest to learn where the large river emptying itself at Point D'Urville has its source. So far, the rivers have been the only means of penetrating into the interior, for the vegetation is so dense that it prevents extensive journeys. The map shows that the outlines of many islands are still unknown, and we must add that the positions of the small islands and reefs are uncertain.

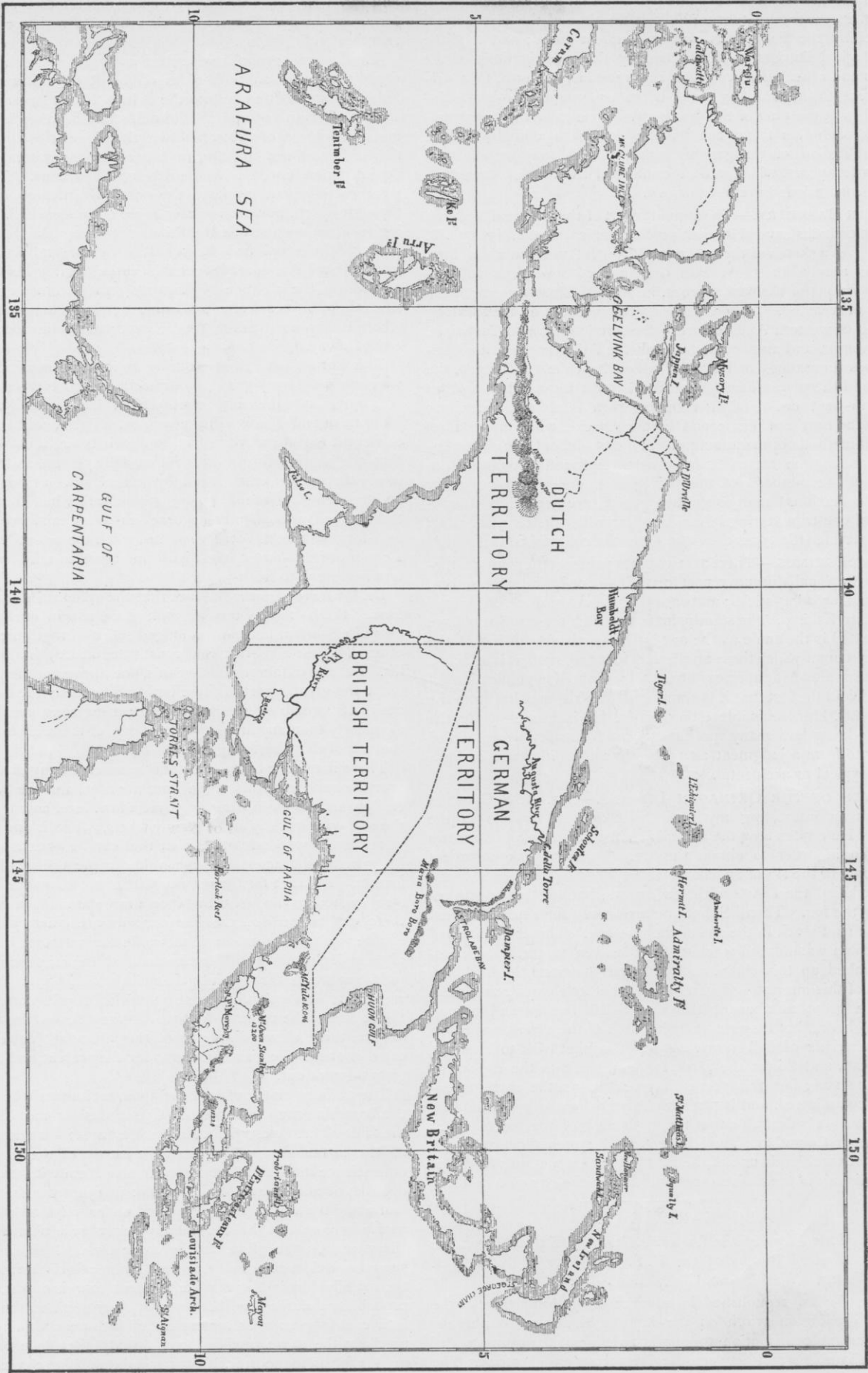
A great difficulty in all enterprises on New Guinea is occasioned by the hostility of the natives. In some parts the English missionaries have succeeded in gaining their confidence, particularly by the help of Polynesian teachers, but generally the natives are distrustful and aggressive. The same is true in New Ireland and New Britain; but it is hoped that in course of time better relations will be established. Recently natives of New Guinea and New Britain have begun to work on the plantations of the companies. The climate of the island is in most parts unhealthy, particularly in the swampy alluvial districts, which are very fertile. It may be, however, that it will become more healthful when the woods are cleared and the swamps drained, as was the case in northern Queensland.

ETHNOLOGY.

Mound-Exploration.

THE second bulletin of the Bureau of Ethnology is a statement by Mr. Cyrus Thomas, who is in charge of the archaeological division of the bureau, on the methods adopted for carrying on mound-exploration, and on the present state of the work of the division. His method of investigation is to mark out the several archaeological districts by searching for typical forms of remains in the different parts of the country. For the present the field of researches is limited to the district east of the Rocky Mountains. Three north and south lines were worked: the first and principal one, the immediate valley of the Mississippi from Wisconsin southward; the second, from Ohio southward through Kentucky to Mississippi; and the third, in the valley of eastern Tennessee and western North Carolina, thence southward through Georgia and Alabama to Florida. Sections which had been somewhat carefully worked over were generally passed by. The specimens found by the exploring parties are handed over to the National Museum.

Among the results so far obtained, the most important ones are mentioned in the bulletin. The links discovered directly connecting the Indians and mound-builders are so numerous and well established that there should be no longer any hesitancy in accepting the theory



SKETCH-MAP SHOWING RECENT EXPLORATIONS IN NEW GUINEA.

that the two are one and the same people; that a great number of these ancient monuments were built at the time of the discovery of America by the Europeans and subsequent to it; and that the archæological districts, as determined by the investigations of the mounds and other ancient works and remains, conform, to a certain extent, to the localities of the tribes or groups of cognate Indian tribes at the time of the discovery. Conclusions on early migrations of Indian tribes can only be drawn to a limited extent. The publication of the general report, which may be expected within a few years, will contain the material from which these important conclusions have been drawn.

INDIAN BASKETRY.—The annual report of the National Museum for 1884 contains several interesting ethnological papers. Prof. O. T. Mason gives a sketch of the basketry of North American aborigines, which is amply illustrated with drawings of specimens and enlarged portions of the basket-work, in order to illustrate exactly the manner of weaving. Mason discusses the methods in use all along the coast of western America from the Arctic Ocean to California, in the interior, and among the tribes of the Atlantic coast, and distinguishes three types of basketry, which he calls the twined, the coiled, and the woven ones. The first is most frequently found on the north-west coast. Coiled basket-work is almost exclusively used by the northern Tinné and by the Apache, while many tribes apply all methods of manufacture. A great difficulty in determining the areas of characteristic forms is encountered through the deficiency of the methods of many collectors, and the fragmentary state of collections; many specimens which are seemingly characteristic of one tribe having in reality a far wider distribution, while other characteristic types are wanting in the collections.

OF THE ESKIMOS.—There are two other papers of the same character in the National Museum report for 1884,—one by the same author, on Eskimo throwing-sticks; and one by Mr. John Murdoch, on bows of the western Eskimo. The standpoint from which these subjects have been treated is the same as the one indicated above. A list of the specimens upon which these studies are founded, such as is attached to Professor Mason's paper, ought not to be omitted in publications of this kind, and the fact that it is wanting detracts somewhat from the value of Mr. Murdoch's interesting paper. It is necessary for the reader to know how many specimens of each locality were studied in order to form a judgment as to how far the difference in form may be typical or accidental.

A MYTH OF THE OKINAGEN INDIANS.—Mr. A. S. Gatschet publishes an interesting myth of the Okinagen Indians in the *Globus*. He relates how the animals climbed on a chain of arrows to heaven in order to obtain the fire. The bird Tschan made a strong bow of the rib of an elk which he killed by eating its heart. Then he killed the *coyote* with his arrows, but the latter was revived by the fox. Then he shot one arrow into the sky. The next arrow he shot stuck in the end of the first one. Thus he continued until a chain was formed reaching from heaven to earth. All animals climbed up this chain, and the beaver obtained the fire. An analysis of this interesting legend shows that its elements are found among a great number of tribes of Selish lineage and among their neighbors, but it seems that the myth of the ascent to heaven is characteristic of Selish mythology. Gatschet tries to interpret this legend, and thinks the bird Tschan represents the moon, the *coyote* the sun; but this seems improbable, as the myth is extremely complicated, and is probably derived from a great number of sources. It is desirable that the mythology of the native tribes of the upper Columbia should be collected systematically, for the analysis of tradition is one of the most important methods of studying the history of the native races and the psychology of nations.

BOOK-REVIEWS.

Synopsis of the Flora of the Laramie Group. (Extract from the Sixth Annual Report of the U. S. Geol. Surv.) By LESTER F. WARD. Washington, Government. 4°.

THIS synopsis is published in advance of the completion of the author's great monograph on the Laramie flora, and is a timely and important contribution to our knowledge of the thousands of feet of debatable strata between the Cretaceous and Tertiary. The literature of the Laramie group is already large and widely scattered,

and Mr. Ward has conferred a boon upon future students of this formation by his clear and comprehensive review of previous researches and opinions.

The Laramie group is described as an extensive, brackish-water deposit, situated on both sides of the Rocky Mountains, and extending from Mexico far into the British North American territory, having a breadth of hundreds of miles, and representing some 4,000 feet in thickness of strata. When this deposit was made, an immense inland sea must have existed, whose waters occupied the territory now covered by the Rocky Mountains. These waters were partially cut off from the ocean by intervening land areas, through which, however, one or more outlets existed, communicating with the open sea at that time occupying the territory of the Lower Mississippi and Lower Rio Grande valleys. That this great inland sea spread over this entire territory, is not at all disproved by the absence of Laramie strata from large parts of it, since these parts are situated, in most cases, in mountainous regions where the upper strata might be expected to have been generally eroded away.

This Laramie sea existed during an immense period of time, and was finally but very gradually drained by the elevation of its bed, through nearly the middle of which, longitudinally, the Rocky Mountains and Black Hills now run. The exceeding slowness of this event is shown by the fact, so clearly brought out by Dr. White, that the marine forms of the Fox Hills strata, as they gradually found themselves surrounded by a less and less saline medium on the rising of the intervening land area, had time to become transformed and adapted to brackish-water existence, while these new-formed brackish-water species, when the sea at length became a chain of fresh-water lakes, had time again to take on the characters necessary to fresh-water life.

Dr. White recognizes the fact that the upheaval of the strata that formed the bottom of this sea took place, not in one uniform process of elevation, but in a prolonged series of rhythmic fluctuations of level, whose algebraic sum constituted at length a mountain uplift. But the numerous coal-seams, one above another, that characterize the greater part of these beds, and equally the successive deposits of vegetable remains at different horizons, speak even more eloquently than any animal remains can, of the oscillatory history of the bed of this sheet of water.

There may have been, and doubtless were, many islands scattered over the surface of this sea in Laramie time, and the evidence generally warrants us in assuming that a low, level country surrounded the sea, with marshy and swampy tracts. The islands and shores were heavily wooded with timber that can be as certainly known in its general character as we can know the timber of our present forests. But that for the greater part of the Laramie period there also existed at no great distance a large amount of elevated land, there can be no doubt. The deposits are chiefly siliceous in the southern districts, and argillaceous in the northern, but the nature of their deposition points unmistakably to the existence of large and turbulent rivers, that fell into the quiet sea and brought down from areas of rapid erosion immense quantities of silt corresponding to the nature of the country over which they flowed in their course. Where these elevated sources of this abundant detritus were located is one of the great problems for the present and future geologists to work out.

The author points out that the apparent impossibility of referring the Laramie group to either the Cretaceous or the Tertiary is not the fault of the investigators, but of the facts; for the real disagreement is in the organic forms and the nature of the deposits, so that omniscience itself could never harmonize them with the forms and deposits of other parts of the world: in other words, the Laramie fauna and flora have been developed under physical conditions so nearly unique that it is extremely improbable that they obtained elsewhere on the globe at the same time. And even supposing such a coincidence possible, if the Laramie invertebrate forms are the modified descendants of antecedent marine forms, there is no probability that the conditions at any other point on the earth's surface could be so nearly identical with those obtaining there, that precisely the same modifications would take place to adapt the marine forms to the brackish-water habitat. The chances are therefore infinity to one against the existence of other beds that shall