

force for the promotion of science, ready to cooperate with other institutions which are now or may be established in Washington or elsewhere. By its very foundation it is precluded from any thought of rivalry. If the founder's hopes are realized his wise and munificent bounty will benefit not only our own country but the interests of mankind.

D. C. G.

*THE WRECK OF MT. MAZAMA.**

INTRODUCTION.

THE geological record of this country from the earliest epochs to the present time is replete in volcanic phenomena, but the climax in such matters appears to have been reached in the earlier portion of the Neocene, when one of the largest known volcanic fields of the world was vigorously active in our Northwestern States. It stretches from the Rocky Mountains to the Pacific, embracing a large part of Wyoming, Montana, Idaho, Washington, Oregon and California, and presents a great variety of volcanic phenomena concerning which, notwithstanding a copious literature, there has been as yet but a small amount of detailed investigation. The work of the Geological Survey has taken me across this field in various directions and afforded an extended opportunity at intervals during nearly a score of summers upon the Pacific coast to study the western portion of the field. Instead of attempting a summary of what has been done in this large field, as perhaps might be expected upon this occasion, I beg to call your attention more particularly to a special feature in the volcanology of the Cascade Range, which,

so far as I am aware, is not well represented in any other portion of the field nor in fact anywhere else within the United States. To set forth more clearly the wreck of Mt. Mazama, which is the central theme, it is necessary to consider briefly the general relations of the whole range.

LIMITS OF THE CASCADE RANGE.

The western limit of the great volcanic field is marked by the corresponding border of the Cascade Range, which is made up at least largely, if not wholly, of volcanic material erupted from a belt of vents extending from northern California to central Washington. Lassen Peak marks the southern end of the Cascade Range and Rainier is near the northern end. Beyond these peaks the older rocks rise from beneath the Cascade Range and form prominent mountains, the range itself occupying a depression in these older terranes.

FOUNDATION OF CASCADE RANGE.

A clearer conception of the development of the Cascade Range may be gained by considering the geography of the region during the later portion of the Cretaceous. At that time the coast of northern California, Oregon and Washington subsided, causing the sea to advance upon the land. In California it reached the western base of the Sierra Nevada and covered a large part, if not the whole, of the Klamath Mountains. In Washington it beat upon the western base of the range near the coast north of Mt. Rainier, but in Oregon it extended far into the interior. Marine deposits of this period occur along the base of the Blue Mountains in eastern Oregon. The Cascade Range of Oregon did not then exist to shut out the open sea from that region. East of the Klamath Mountains, as shown by the position and distribution of the Cretaceous strata and their fossils of marine origin, the open sea connected directly with that of the Sacramento Val-

* Abstract of Presidential address delivered before the Geological Society of Washington, Dec. 18, 1901. The full address with geological map and illustrations will probably appear as a bulletin of the U. S. Geological Survey.

ley. The Cascade Range throughout a large part of its extent rests upon Cretaceous rocks and is associated in Oregon and California with a depression in the older rocks between the Klamath Mountains on the one hand and the Blue Mountains and Sierra Nevada upon the other. This depressed area beneath the lavas of the Cascade Range must not be regarded primarily as a region of subsidence. Its chief movement since the Cretaceous has been upward. It has been raised above the sea. The Klamath and Blue Mountains, as well as the Sierra Nevada, however, have been elevated so much more that the region in question would appear on the surface as a depression were it not filled with lava. The depression is so deep where the Cascade Range is cut across by the Klamath and Columbia rivers that the bottom of the lavas forming the bulk of the range is not reached. However, at the ends of the range the older rocks rise to form a more or less elevated base for those parts of the range, and at Mt. Shasta as well as on the divide between the Rogue and Umpqua rivers, where an arch of the older rocks extends northeasterly from the Klamath Mountains towards the Blue Mountains of eastern Oregon, the Cascade Range gets so close to the western side of the depression that the lavas lap up over the arch of older rocks rising to the westward. At various points of the range granolitic rocks, such as gabbro and diorite, occur, but the deep erosion at these points may have reached the granolites corresponding to the lavas of the upper portion of the range.

CASCADE RANGE DURING THE EOCENE.

There can be no reasonable doubt that fossiliferous Cretaceous rocks of marine origin are widely distributed beneath the Cascade Range from Lassen Peak to the Columbia, and that during the Chico epoch the whole area was beneath the sea.

At the close of the Chico important changes occurred in the distribution of land and sea. Northern California, as well as southern Oregon, was raised above the sea and subjected to extensive erosion before the subsidence which admitted the sea during the early part of the Tertiary as far southeast as Roseburg, Oregon. The marine deposits of the Eocene epoch in the vicinity of Roseburg run under the Cascade Range, but have not yet been found upon the eastern side. The conglomerates of the Eocene, like those of the Cretaceous, contain many pebbles of igneous rocks, but they are of types common to the Klamath Mountains and rare or unknown among the lavas exposed in the Cascade Range. During the Eocene in the Coast Range of Oregon there was vigorous volcanic activity,* but the record of such activity, if such existed, has not yet been found in the Cascade Range. That volcanoes were active along the range during the Eocene is rendered more probable although not yet conclusive by Dr. J. C. Merriam's discovery of Eocene volcanic deposits in the John Day region.†

CASCADE RANGE DURING THE MIOCENE.

There can be no doubt, however, that during the Miocene‡ the volcanoes of the Cascade Range were most active and the greater portion of the range built up, although it is equally certain that volcanic activity continued in the same region at a number of points almost to the present time. While it may be presumed that the volcanoes of the Cascade Range are extinct, there are many solfataras, hot springs and fumeroles, showing that the volcanic energy of the range is not yet wholly dissipated.

* U. S. Geol. Survey, Seventeenth Annual Report, Part I., p. 456.

† *Bulletin Geol. Dept. of Univ. of Cal.*, Vol. 2, No. 9, p. 285.

‡ U. S. Geol. Survey, 20th Annual Report, 1898-9, Part III., p. 32.

All the peaks of the Cascade Range were once active volcanoes, and from them came most of the lava of the range. Each great volcano was surrounded within its province, at least during the later stages, by numerous smaller vents from which issued the lava that filled up the intervening spaces and built up the platform of the range.

All of the great volcanoes of the range probably had their beginning in the Miocene. Many of them, like Lassen Peak and Mount Shasta, continued their activity into the Glacial Period and have suffered much erosion since they became extinct. In this manner important structural differences have been brought to light among the peaks about the headwaters of the Umpqua, Rogue river and the Klamath, and these may be noted as throwing some light upon the history of Mt. Mazama, whose wreck we are to consider.

UNION PEAK.

Union Peak (7,881 feet) is on the summit of the Cascade Range in Oregon about 50 miles north of the California line, and 8 miles southwest of Mt. Mazama. It is a sharp conical peak rising about 1,400 feet above the general summit of the range. About the base upon the east and west sides, as well as upon its very summit, are remnants of the original tuff cone, but the mass of the peak exposed upon all sides is solid lava. The molten material did not sink away after the final eruption. The volcanic neck resulted from the cooling of lava within the cinder cone in the very top of the volcanic chimney, and Union Peak to-day shows us the neck stripped of its cinder cone.

MT. THIELSEN.

Mt. Thielsen (9,250 feet), the Matterhorn of the Cascade Range, is 12 miles north of Mt. Mazama and rises about 2,000 feet above the general summit of the range.

It is built up of brightly colored red, yellow and brown layers of tuff interbedded with thin sheets of lava, and the whole is cut by a most interesting network of dikes radiating from the center of the old volcano. No trace of a volcanic neck is present; the peak is but a remnant carved out of the lava and tuff cone surrounding the vent. After the final eruption the molten material withdrew from the cone before consolidation so as to leave no volcanic neck corresponding to that of Union Peak. The subsidence after eruption within the chimney of Mt. Thielsen must have been over 1,000 feet, for the sheets of lava effused from that vent reach more than 1,000 feet above the central portion of the peak.

MOVEMENT IN MT. MAZAMA.

To simplify matters it seems best at this point to anticipate some of the conclusions to be reached and state that upon what is known as the rim of Crater Lake there once stood a prominent peak to which the name Mt. Mazama has been given. The crowning event in the volcanic history of the Cascade Range was the wrecking of Mt. Mazama, which resulted from a movement similar to that just noted in Mt. Thielsen but vastly greater in its size and consequences. It culminated in the development of a great pit or caldera, which for grandeur and beauty rivals anything of its kind in the world.

Mt. Mazama is practically unknown to the people of Oregon, but they are familiar with Crater Lake, which occupies the depression within the wreck of the great peak. The destruction of the mountain resulted in the formation of the lake, and the remnant of Mt. Mazama is most readily identified when referred to as the 'rim of Crater Lake.'

CASCADE RANGE SUMMIT.

The Cascade Range in southern Oregon is a broad irregular platform, terminating

rather abruptly in places upon its borders, especially to the westward, where the underlying Cretaceous and Tertiary sediments come to the surface. It is surmounted by volcanic cones and coulees, which are generally smooth but sometimes rough and rugged. The cones vary greatly in size and are distributed without regularity. Each has been an active volcano. The fragments blown out by violent eruption have fallen about the volcanic orifice from which they issued, and built up cinder cones. From their bases have spread streams of lava, raising the general level of the country between the cones. From some vents by many eruptions, both explosive and effusive, large cones, like Pitt, Shasta and Hood, have been built up. Were we to examine their internal structure, exposed in the walls of the canyons carved in their slopes, we should find them composed of overlapping layers of lava and volcanic conglomerate, a structure which is well illustrated in the base of Mt. Mazama.

VIEW OF MT. MAZAMA FROM A DISTANCE.

Approaching Crater Lake from any side the rim by which it is encircled, Mt. Mazama, when seen at a distance, appears as a broad cluster of gentle peaks rising about a thousand feet above the general crest of the range on which it stands. The topographic prominence of Mt. Mazama can be more fully realized when it is considered as the head of Rogue River and sends large contributions to the Klamath River, besides being close to the head of the Umpqua. These are the only large streams breaking through the mountains to the sea between the Columbia and the Sacramento, and their watershed might be expected to be the principal peak of the Cascade Range.

GENERAL VIEW OF MT. MAZAMA AND ITS LAVAS.

Arriving by the road at the crest of Mt. Mazama, the lake in all its majestic beauty

appears suddenly in view and is profoundly impressive. The long gentle slope upon the outside at the crest is changed to a precipice. Nearly 20 miles of irregular cliffs ranging from 500 to nearly 2,000 feet in height encircle the deep blue lake and expose in sections many streams and sheets of lava and volcanic conglomerate which radiate from the lake as a center. Along the southern border the rim above the lake level has many superimposed flows, but upon the northeast where it is not so high it is composed largely of one great flow which coursed down a ravine of the ancient Mt. Mazama.

The rim is cut by a series of eleven dikes, one of which is prominent and reaches from below the lake level to the rim crest. Others rise only part way and spread into flows for which they afforded an outlet. Near the west border of the lake is Wizard Island with its lava field and cinder cone surmounted by a perfect crater.

Three kinds of lava occur in Mt. Mazama, andesite, dacite* and basalt. The andesites form nearly nine-tenths of the mass of the rim. Dacites, generally accompanied by pumice, form the surface flows upon the north and east crest of the rim and are everywhere underlain by andesites. Both came from the central vent of Mt. Mazama, which, however, furnished no basalt. It all came from a number of small volcanic cones upon the outer base of the mountain. The dacites are younger than the basalts, for showers of dacite pumice fell in the extinct craters of the basalt cones. As the oldest lavas of Mt. Mazama are andesites, so are the latest, for the lava of Wizard Island is andesite which was poured out upon the floor of the caldera after the destruction of Mt. Mazama. It marks the beginning of a second petrographic cycle from the same vent.

* My collections were studied by Dr. H. B. Paton, who now regards as dacites what I have heretofore called rhyolites.

ORIGINAL CONDITION OF MT. MAZAMA.

Thus far the existence of an original Mt. Mazama has been assumed. The evidence on which this assumption is based may be briefly stated as follows: The inner slope of the rim presents sections of the broken lava flows which radiate from the lake and were evidently effused from a source higher in each case than the respective flow in the rim. If the flows of the rim were to be restored to their original size by extending them inwards from the rim, as they once certainly did, they would converge to a common source and make a volcano which would occupy the place of the caldera and make a prominent peak, Mt. Mazama.

The peak must have had a crater similar in character to that of Wizard Island, for it was the source of much fragmental material spread in all directions upon the mountain slope.

The former existence of Mazama Peak is indicated also by the radial series of dikes which cut the rim. They evidently originated in the pressure of the column of molten material in the chimney of a volcanic peak rising some distance at least above the rim.

The most convincing evidence of the existence of Mt. Mazama on the site of Crater Lake is to be found in the glaciation and drainage of the rim. The radiating glaciers, which in their descent scored the crest of the rim, could have come only from a central peak. The records of the ice and water drainage from the peak in the topography of the rim are unmistakable.

There can be no reasonable doubt as to the former existence of Mt. Mazama, but its shape and size are more difficult to determine. Mt. Mazama is composed largely of lavas similar to those of Mt. Shasta, and from the slopes of that famous peak we may draw an inference as to those of Mt. Mazama. Mt. Shasta, unlike Mt. Mazama, does not stand on an elevated platform. It

rises with a majestic sweep of 11,000 feet from gentle slopes about its base, gradually growing steeper upwards to the bold peak. At the height of 8,000 feet it has about the same diameter as Mt. Mazama at an equal elevation in the rim of Crater Lake. Above this Mt. Shasta rises over 6,300 feet. The prominence of Mt. Mazama as a drainage center is quite equal to that of Mt. Shasta, but its slopes on the rim of Crater Lake, ranging from 10 to 15 degrees, are scarcely as great as those of Mt. Shasta at a corresponding elevation. On the other hand, the canyons of Sun and Sand creeks on Mt. Mazama are more profound and have been much more deeply glaciated than any of those on Mt. Shasta. It therefore appears reasonable to suppose that Mt. Mazama had an altitude at least as great and possibly greater than that of Mt. Shasta (14,380).

DEVELOPMENT OF MT. MAZAMA.

Mt. Scott is only a large adnate cone to Mt. Mazama. It belongs to the same center and holds essentially the same relation to it as Shastina does to Shasta. The slopes of Mt. Mazama reach to the plains at its eastern base, and it is one of the largest members in the composition of that range.

The beginnings of Mt. Mazama are now deeply buried beneath the lavas of the range, including those displayed on the lower slopes of the great caldera beneath the water of Crater Lake. The earliest lavas now visible are those of the southern and western lake border, and when they were erupted the volcano was normally active, sending out with its streams of lava large contributions of fragmental material to make the heavy conglomerates of the older portion of the rim. The many succeeding flows of andesite and layers of conglomerate built up the mountain slope to the crest of the rim upon the southern

and western side, and Mt. Scott, too, had attained its full development when the principal vents of basalt opened and by a series of eruptions built up the surrounding country with adnate cones upon the outer slope of the rim of the lake. Then followed the large eruptions of dacite forming Llao Rock and the northern crest of the rim to Cloud Cap. These flows occurred during the period of glaciation of Mt. Mazama, and streams of lava alternated with streams of ice, a combination which doubtless gave rise to extensive floods upon the slopes filling the valleys below with volcanic débris from the mountain. In connection with the eruption of these viscous lavas (dacites) there were great explosive eruptions of pumice, spreading it for 20 miles or more across the adjacent country. The explosive activity of Mt. Mazama culminated in the eruption of the peculiar dark pumice rich in hornblende which followed the outflow of the tuffaceous dacite.

DESTRUCTION OF MT. MAZAMA—ORIGIN OF THE CALDERA.

Then came the revolution which removed the upper 6,000 feet of Mt. Mazama, as well as a large core from its base, and gave rise to the caldera. How was this change produced?

There are only two ways in which it could have been effected: either by an explosion which blew it away, or a subsidence which engulfed it.

The occurrence of vast quantities of pumice spread for a distance of 20 miles in all directions about the base of Mt. Mazama is evidence of a most tremendous explosive eruption at that point, an eruption the equal of which, so far as known, has not yet been found anywhere else in the Cascade Range. Vast quantities of fine material were blown out at the same time and by drainage gathered into the sur-

rounding valleys, which it fills to an extent unknown, as far as I have observed, upon the slopes of any of the other great volcanoes of the range.* This impressive evidence shows conclusively that a late, if not the final, eruption of Mt. Mazama was explosive, and of such magnitude as to suggest that the removal of the mountain and the origin of the caldera may be counted among its effects. This suggestion, however, is not supported by the evidence resulting from a study of the ejected material and its relation to the lava flows of the rim. The fine material filling the valleys and the pumice throughout its great area is hornblendic in character and belongs to the dacites of the rim. Andesitic material may be present locally, but its occurrence is exceptional. Practically the whole of the material ejected by the final explosion is dacite. The eruption therefore was of the usual type and not of the kind which removes mountains. As far as may be judged from the pumice deposits in the rim, the greatest eruption of that sort of material from Mt. Mazama occurred before the extrusion of the dacite of Llao Rock, and furnishes evidence that the greatest explosion occurred long before the destruction of Mt. Mazama.

There is another matter of importance bearing directly upon the explosive theory of the caldera which renders that theory wholly untenable and fully corroborates the conclusion derived from a study of the character and distribution of the pumice. The lava exposed upon the inner slope of the rim is chiefly andesite, and its relation is such as to indicate that solid sheets of andesitic lava formed by far the larger part of Mt. Mazama. If the caldera resulted from an explosion this mass of andesitic flows would be broken to frag-

* As far as my own observation goes, the above remarks apply to Lassen Peak, Mt. Shasta, Mt. Pit, Mt. Thielsen, Diamond Peak and Mt. Hood.

ments and blown out to fall around the caldera and form a rim of fragmental material. From the size of the lake and the remaining portion of Mt. Mazama it is possible to compute approximately what the size of the rim formed in this way would be. But before we can do this it is necessary to consider the size and shape of the caldera, especially that part which lies beneath the lake.

THE BOTTOM OF CRATER LAKE.

To determine the configuration of the bottom of Crater Lake a large number (168) of soundings were made under the direction of Major Dutton. His results were published by the U. S. Geological Survey upon a special map of the lake, scale 1: 62,500 with a contour interval of 100 feet. The principal lines of soundings are noted, including 96 of the 168 measured depths. From these data, together with information from Mr. W. G. Steel, who was present when the soundings were made, the bottom has been roughly contoured upon the large scale map with a vertical interval of 500 feet. The positions of the two sublacustrine cones were indicated, and it is clear from the soundings that a large mass of lava spread from the Wizard Island vent over the lake floor. The great deep toward the eastern margin of the lake may not have been filled up any after the caldera was formed, but it is evident that the depth of the western portion has been greatly reduced by the material erupted from the three small vents upon its floor. It appears well within the bound of reason to assume that 1,500 feet is not greater than the average depth of the original caldera below the present level of the lake.

ESTIMATED SIZE OF FRAGMENTAL RIM.

The area of the caldera, as marked out by the crest of the rim, is over 27 square miles, and its original volume, making

some allowance for the subsequent refilling from the craters on its floor, is about 12 cubic miles. If to this we add 5 cubic miles for the part of the mountain above the caldera, and this is a conservative estimate, we get 17 cubic miles of material for whose disappearance we have to account. If this material were blown out by a great explosion and fell equally distributed upon the outer slope of the rim, within three miles of the crest it would make a layer over 1,000 feet in thickness. This mass would be so conspicuous and composed of such fragmental material that its presence could not be a matter of doubt. There can be no question concerning its complete absence, for the surface of the outer slope of the rim exposes everywhere either glaciated rock, glacial moraine or pumice, all of which are features which belonged to Mt. Mazama before its destruction, and no trace of a fragmental rim, such as is referred to above, was found anywhere.

The evidence of the outer slope of the rim lends no support to the view that Mt. Mazama was blown away and the caldera produced by a great volcanic explosion. In fact, it completely negatives such a view, and we are practically driven to the opinion that Mt. Mazama has been engulfed. Major Dutton, who studied the rim of Crater Lake with a training gained from among the active volcanoes of the Hawaiian Islands, recognized the wide distribution of the pumice, but the absence of a well-defined fragmental rim kept him from attributing the origin of the caldera to an explosion. On the other hand, he fully appreciated the difficulty of proving that it originated in a subsidence.*

The present inner slope of the rim may not in all cases, or even generally, be the one formed at the time of the collapse. In some cases, however, the inner slope was

* U. S. Geological Survey, 8th Ann. Rept., Part I., p. 157.

formed at that time. Of this we have evidence in the behavior of the flow at Rugged Crest. It was one of the final flows from the slope of Mt. Mazama. Before the central portion of the flow where thickest had congealed within the solid crust, Mt. Mazama sank away and the yet viscous lava of the middle portion of the stream flowed down over the inner slope of the andesitic rim into the caldera. The liquid interior of the flow having withdrawn, the crust caved in and formed Rugged Crest with its peculiar chaotic valley of tumbled fragments, columns and bluffs. Other explanations of the peculiar reversed flow of Rugged Crest have been sought, but without avail. The facts are so simple and so direct that they appear to preclude any other hypothesis.

It would be apparent from the facts also that the collapse of the mountain was at least moderately sudden, for it is not at all probable that the Rugged Crest flow was long exposed before reaching the present level of the lake and beyond into the caldera.

We may be aided in understanding the origin of the caldera by picturing the condition that must have obtained during the eruption of the Rugged Crest dacite from the upper slope of Mt. Mazama. At that time a column of molten material rose in the interior of the mountain until it overflowed at the summit or burst open the sides of the mountain and escaped through the fissure. The rent of the mountain side is formed in such cases by the pressure of the column of molten material it encloses. The molten lavas being heavy, the pressure of the column within the mountain is very great, and increases rapidly with the height of the volcano. During the final activity of Mt. Mazama there must have been within it a column of lava over 8,000 feet in height above the base of the Cascade Range. It is possible that on ac-

count of this great pressure, aided possibly by some other forces, an opening was formed low down upon the mountain slope, allowing the lava to escape. The subsidence of the lava within the mountain left it unsupported and caused its collapse. Phenomena of this sort are well known in connection with the Hawaiian volcanoes. In 1840, according to Professor J. D. Dana, there was an eruption from the slopes of Kilauea, 27 miles distant and over 3,000 feet below the level of its summit. At Kilauea the summit of the lava column is well exposed in a lava lake. In connection with the eruption of 1840 the lava of the lake subsided to a depth of 385 feet, and the irregular walls surrounding it left without support broke off and fell into the molten material below. During the intervals between the eruptions of Kilauea the molten column rises towards the surface only to be lowered by subsequent eruptions. The subsidences, however, are not always accompanied by an outflow of lava upon the surface. At other times it may gush forth as a great fountain hundreds of feet or more in height, as if due directly to hydrostatic pressure.

That Mt. Mazama disappeared and the caldera originated through subsidence seems evident, but the corresponding effusion upon the surface, if such ever occurred, has not yet been found. It is hardly conceivable that 17 cubic miles of material, much of it solid lava, could collapse, be refused and sink away into the earth without a correlative effusion at some other point.

The bottom of the caldera is over 200 feet below the level of Klamath Marsh, which lies at the eastern base of the Cascade Range, and it is not to be expected that the point of escape would occur at any level above (4,200). This consideration would indicate that the effused mass should be sought on the western slope of

the range. The 4,200-foot contour, the level of the lowest portion of the lake bottom, occurs along Rogue River at a distance of less than 12 miles from the rim of the lake. The correlative lavas might perhaps be expected to be dacites closely related to the final flow of Mt. Mazama, but on Rogue River no such lavas were seen,—they are generally basalt; nor is there any suggestion of the escape of such an enormous mass of lava as recently as the time of the great collapse. Whether or not we are able to discover the corresponding effusion, there seems no reasonable doubt that Mt. Mazama was once a reality and that it was wrecked by engulfment.

J. S. DILLER.

U. S. GEOLOGICAL SURVEY.

*THE TEACHING OF ANTHROPOLOGY IN THE UNITED STATES.**

THERE is a feeling among students of anthropology that official instruction in that field has not kept pace with the growth of societies and museums of anthropology, as well as with the ever-increasing volume of literature pertaining to the subject. A science which is rapidly filling our museums and now occupies so much space in current publications should have an exponent at every important seat of learning.

The past decade has, however, witnessed such rapid strides in the progress of anthropological teaching that fears for the future of this particular field of activity may, after all, prove groundless.

Nearly three years ago I began to collect information on the extent of instruction in anthropology in Europe and the United States. The results were embodied in a paper† that was read before Section H at

* Read at Denver before Section H of the American Association for the Advancement of Science, August 29, 1901.

† SCIENCE, December 22, 1899, pp. 910-917.

the Columbus meeting, August, 1899, and which led to the appointing of a committee to consider ways and means of furthering instruction in anthropology in our own institutions of learning. The members of the original committee appointed by Vice-President Wilson were W J McGee, of Washington, chairman; Frank Russell, of Cambridge; and George Grant MacCurdy, of New Haven. Two additional members, Franz Boas, of New York, and W. H. Holmes, of Washington, were appointed later and, at the New York meeting in 1900, the committee of five was made a special committee of the Association, 'Committee on the teaching of anthropology in America.'

This committee is at present preparing a circular, the object of which is to set forth the aims, scope and importance of anthropology, as well as its place in higher education. At a recent committee meeting held in Washington it was decided that such a circular note, to be of the highest value, should be based on the latest and fullest information relative to the extent and trend of instruction in anthropology. Having already published one paper on the subject, I was appointed to bring that paper up to date so far as it related to the United States.

A circular note of inquiry was addressed to one hundred and twenty-one of our most important universities, colleges and medical schools. The number and character of the responses have been very gratifying. Of the one hundred and twenty-one institutions 31* offer instruction in anthropology; 36 do not, and 54 have not yet been heard from.

This is a vast improvement over the conditions which prevailed in 1899, so far as we had knowledge of them, as may be seen by comparison with the following table prepared two years ago:

* Including Phillips Academy, Andover, Mass.