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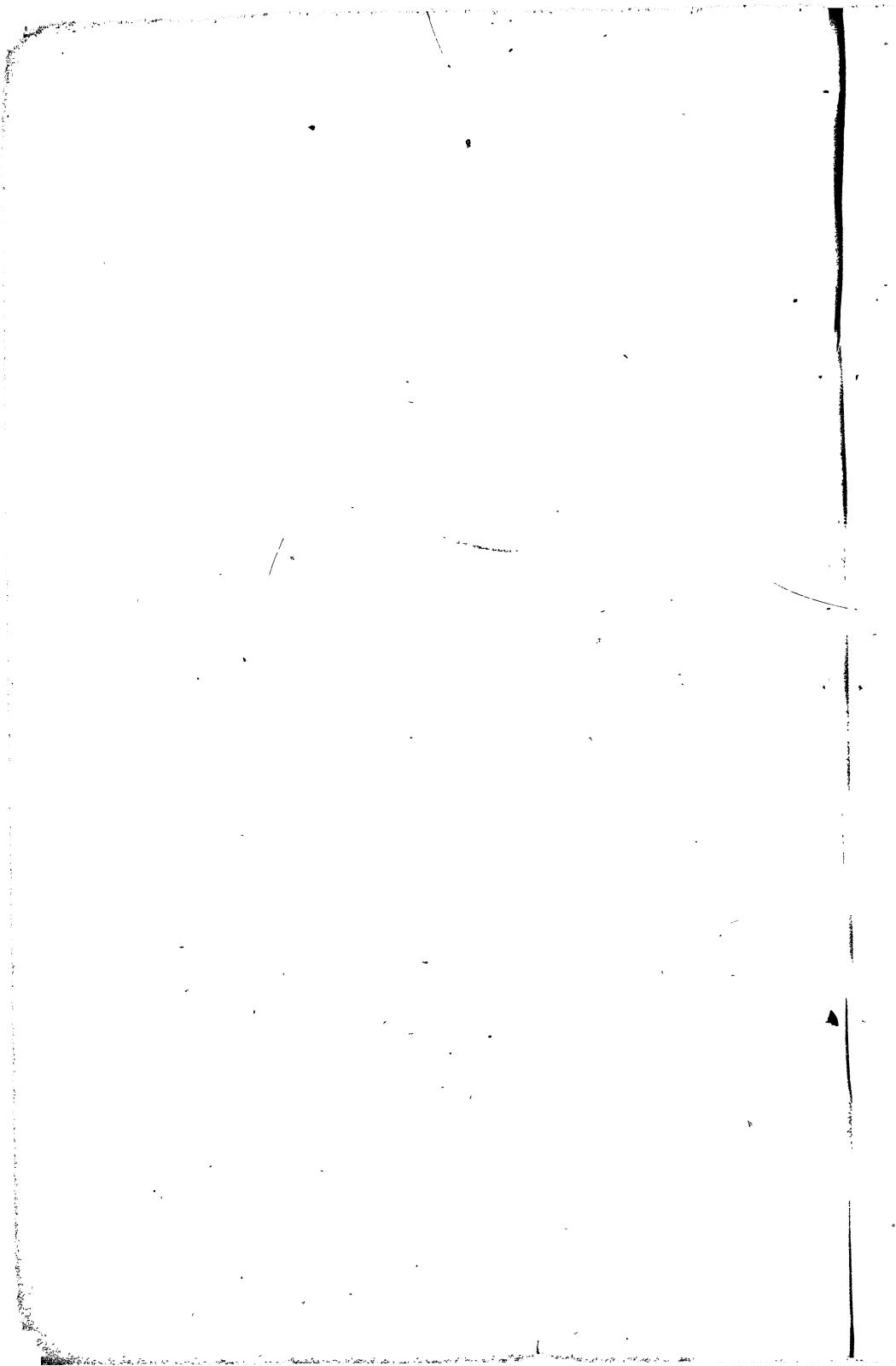
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ON THE
SUPPOSED PREVALENCE
OF
ONE CRANIAL TYPE THROUGHOUT THE
AMERICAN ABORIGINES.

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ON THE

SUPPOSED PREVALENCE

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ONE CRANIAL TYPE THROUGHOUT THE AMERICAN
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Among the various grounds on which Columbus founded his belief in the existence of an undiscovered continent beyond the Atlantic, especial importance was attached to the fact that the bodies of two dead men had been cast ashore on the island of Flores, differing essentially in features and physical characteristics from any known race. When at length the great discoverer of this western world had set his foot on the islands first visited by him, the peculiarities which marked the gentle and friendly race of Guanahanè were noted with curious minuteness; and their "tawny or copper hue," their straight, coarse, black hair, strange features, and well-developed forms, were all recorded as objects of interest by the Spaniards. On their return the little caravel of Columbus was freighted not only with gold and other coveted products of the New World, but with nine of its natives, brought from the Islands of San Salvador and Hispaniola,—eight of whom survived to gaze on the strange civilization of ancient Spain, and to be themselves objects of scarcely less astonishment than if they had come from another planet. Six of these representatives of the western continent, who accompanied

* Read before the British Association for the Advancement of Science, at Dublin, Sept. 7, 1857.

2 *On the Supposed Prevalence of One Cranial Type*

Columbus to Barcelona, where the Spanish Court then was, were baptized with the utmost state and ceremony, as the first fruits offered to Heaven from the new-found world. Ferdinand and the enthusiastic and susceptible Isabella, with the Prince Juan, stood sponsors for them at the font; and when, soon after, one of them, who had been retained in the Prince's household, died, no doubt as to their common humanity marred the pious belief that he was the first of his nation to enter heaven.

Such was the earliest knowledge acquired by the Old World of the singular type of humanity generically designated as the Red Indian; and the attention which its peculiarities excited when thus displayed in their fresh novelty has not yet exhausted itself, after an interval of upwards of three centuries and a half. That certain special characteristics in complexion, hair, form, and features, do pertain to the whole races of this continent is not to be disputed; and these prevalent characteristics were so generally noted, to the exclusion of all others, that Ulloa, and after him others of the Spanish explorers of the New World, remarked: *He who has seen one tribe of Indians has seen all.* In the sense in which this remark was first made, and by Spaniards who knew only of Central America and the tropical region of the Southern continent, there was nothing in it to challenge. But that which was originally the mere rude generalization of a traveller has been adopted in our own day as a dogma of science; and the universality of homogeneous characteristics of the aboriginal tribes and nations of America, with the exception of the Esquimaux, is assumed as an established postulate for the strictest purposes of scientific induction, and has been repeatedly affirmed in those very words.

Such authorities as Robertson the historian, and Malte Brun, may be classed along with the first Spanish observers, in the value to be attached to their sweeping generalizations. "The Esquimaux," says the former, "are manifestly a race of men distinct from all the nations of the American continent, in language, in disposition, and in habits of life. But among all the other inhabitants of America there is such a striking similitude in the form of their bodies, and the qualities of their minds, that, notwithstanding the diversities occa-

sioned by the influence of climate, or unequal progress of improvement, we must pronounce them to be descended from one source.* Malte Brun, with more caution, simply affirms, as the result of a long course of physiological observations, "that the Americans, whatever their origin may be, constitute at the present day a race essentially different from the rest of mankind."† But greater importance is to be attached to the precisely-defined views of Humboldt, in so far as these are not—like those of so many other writers on this subject—a mere reproduction of the opinions of Morton. Humboldt remarks in the preface to his *Researches*: "The nations of America, except those which border the Polar circle, form a single race, characterized by the formation of the skull, the colour of the skin, the extreme thinness of the beard, and the straight glossy hair."

Very few and partial exceptions can be quoted to the general unanimity of American writers,—some of them justly regarded as authorities in ethnology,—in reference to this view of the nations of the whole American continent, north and south. With the solitary exception of the Esquimaux, they are affirmed to constitute one nearly homogeneous race, varying within very narrow limits from the prevailing type, and agreeing in so many essentially distinctive features, as to prove them a well-defined variety, if not a distinct species of the genus *Homo*. Prichard, Lawrence, Wiseman, Knox, Squier, Gliddon, Nott, and Meigs, might each be quoted in confirmation of this opinion, and especially of the prevailing uniformity of certain strongly-marked cranial characteristics: but the fountain-head of all such opinions and views is the justly-distinguished author of the *Crania Americana*, Dr Morton of Philadelphia. His views underwent considerable modification on some points relating to the singular cranial confirmation observable in certain skulls found in ancient American graves; especially in reference to the influence of artificial means in perpetuating changes of form essentially different from the normal type; but the tendencies of his ma-

* Robertson's *America*, B. IV. In relation to languages, this difference between the Esquimaux and the Indians is no longer maintained.

† Malte Brun, *Geog. Lib.* xxv.

4 *On the Supposed Prevalence of One Cranial Type*

tured opinions all went to confirm his original idea of universal approximation to one cranial type throughout the New World. In some of his latest recorded views he remarks, as the result of his examination of a greatly extended series of Peruvian crania, — “ I at first found it difficult to conceive that the original rounded skull of the Indian could be changed into this fantastic form ; and was led to suppose that the latter was an artificial elongation of a head remarkable for its length and narrowness. I even supposed that the long-headed Peruvians were a more ancient people than the Inca tribes, and distinguished from them by their cranial configuration. In this opinion I was mistaken. Abundant means of observation and comparison have since convinced me that *all these variously-formed heads were originally of the same rounded shape.*”

Such are the latest views of Dr Morton, as set forth in the posthumous paper on *The Physical Type of the American Indians*, contributed by him to the second volume of Dr Schoolcraft's “ History of the Indian Tribes,” and edited for that work by his friend and fellow-labourer, John S. Phillips. In that same final contribution to his favourite science, Dr Morton's matured views on the cranial type of the American continent,—based on the additional evidence accumulated by him, in the interval of twelve years which elapsed between the publication of the *Crania Americana* and the death of its author,—are thus defined : “ The Indian skull is of a decidedly rounded form. The occipital portion is flattened in the upward direction, and the transverse diameter, as measured between the parietal bones, is remarkably wide, and *often exceeds the longitudinal line.** The forehead is low and receding, and rarely arched as in the other races ; a feature that is regarded by Humboldt, Lund, and other naturalists as a characteristic of the American race, and serving to distinguish it from the Mongolian. The cheek-bones are high, but not much

* In this statement Dr Morton would seem to have had in view his theoretical type, rather than the results of his own careful observations, unless he accepted as evidence the artificially abbreviated and flattened skulls, and even of these his *Crania Americana* furnishes only one exceptional example, from a mound on the Alabama River (Pl. LIV). “ It is flattened on the occiput and on the frontis in such a manner as to give the whole head a sugar-loaf or conical form, whence also its great lateral diameter and its narrowness from back to front.”

expanded ; the maxillary region is salient and ponderous, with teeth of a corresponding size, and singularly free from decay. The orbits are large and squared, the nasal orifice wide, and the bones that protect it arched and expanded. The lower jaw is massive and wide between the condyles ; but, notwithstanding the prominent position of the face, the teeth are for the most part vertical.* The views thus set forth by him who has been justly designated "the founder of the American school of Ethnology,"† have been maintained and strengthened by his successors ; and scarcely any point in relation to Ethnographic types is more generally accepted as a recognised postulate than the approximative-homogeneous cranial characteristics of the whole American race. A distinction, indeed, is made by Morton, and to some extent recognised by his successors, between the *barbarous*, or *American*, and the *civilized*, or *Toltecan* tribes of the continent ; but the distinction, according to their own view, is arbitrary, and appears alike indefinite and unsatisfactory ; unless an essential difference of race, corresponding to that which is held to separate the Esquimaux from the true *Autochthones* of America, is acknowledged to exist, whereas this is expressly denied. One of the three propositions with which Dr Morton sums up the results borne out by the evidence advanced in his *Crania Americana*, is, "That the American nations, excepting the polar tribes, are of one race and one species, but of two great families, which resemble each other in physical, but differ in intellectual character."‡ Any further difficulty, arising from physical differences, is sought to be overcome by the application of the hypothesis, that "these races originated in *nations*, and not in a single pair ; thus forming proximate but not identical species."§ But the difficulty is not fairly grappled with by any of the writers of "the American school of Ethnology." The closest approximation to a recognition of the legitimate deduction from such contrasting cranial characteristics is made by Dr Morton himself, where he remarks, in reference to the larger

* Physical Type of the American Indians. Schoolcraft's Hist., &c., ii. p. 316.

† Types of Mankind, p. 87.

‡ *Crania Americana*, p. 260.

§ Types of Mankind, p. 276.

cerebral capacity of the Indian in his savage state, than of the semi-civilized Peruvian or ancient Mexican—"Something may be attributed to a primitive difference of stock; but more, perhaps, to the contrasted activity of the two races." It is to be noted, moreover, that Dr Morton distinctly recognises certain unmistakeable diversities of form into which the assumed American cranial type is subdivided. He thus remarks, in his *Crania Americana*, under the head,—*General observations on the barbarous nations composing the American Family*,—"After examining a great number of skulls, I find that the nations east of the Alleghany Mountains, together with the cognate tribes, have the head more elongated than any other Americans. This remark applies especially to the great Lenapé stock,—the Iroquois and the Cherokees. To the west of the Mississippi we again meet with the elongated head in the Mandans, Ricaras, Assinaboins, and some other tribes." But to this, Dr Morton superadds the further remark: "Yet even in these instances the *characteristic truncature of the occiput* is more or less obvious; while many nations east of the Rocky Mountains have the rounded head so characteristic of the race, as the Osages, Ottoes, Missouris, Dacotas, and numerous others. The same conformation is common in Florida; but some of these nations are evidently of the Toltecan family, as both their characteristics and traditions testify. The head of the Charibs, as well of the Antilles as of Terra Firma, are also naturally rounded; and we trace this character, as far as we have had opportunity for examination, through the nations east of the Andes, the Patagonians, and the tribes of Chili. In fact, the flatness of the occipital portion of the cranium will probably be found to characterize a greater or less number of individuals in every existing tribe from Terra del Fuego to the Canadas. If their skulls be viewed from behind, we observe the occipital outline to be moderately curved outward, wide at the occipital protuberances, and full from those points to the opening of the ear. From the parietal protuberances there is a slightly curved slope to the vertex, producing a conical, or rather a wedge-shaped outline." These opinions are still more strongly advanced in Dr Morton's most matured views, where he ascribes the same characteristics to the

Fuegian, the Indian, the tribes to the west of the Rocky Mountains, and those which skirt the Esquimaux on the north. "All possess alike the long, lank, black hair, the brown or cinnamon-coloured skin, the heavy brow, the dull and sleepy eye, the full and compressed lips, and the salient but dilated nose. The same conformity of organization is not less obvious in the osteological structure of these people, as seen in the square or rounded head, the flattened or vertical occiput, the large quadrangular orbits, and the low receding forehead;" and he goes on to reiterate the opinion that, in spite of any "mere exceptions to a general rule," the Indian of every variety "is an Indian still, and cannot be mistaken for a being of any other race." Still more, in the same final embodiment of his matured opinions, Dr Morton affirms the American race to be *essentially separate and peculiar*, and with no obvious links, such as he could discern, between them and the people of the Old World, but *a race distinct from all others*.

It is obvious that the tendency of Dr Morton's views, as based on the results of his extended observations, was to regard the most marked distinctions in American crania as mere variations within narrow limits, embraced by the common and peculiar type, which he recognised as characteristic of the whole continent, both north and south. In this opinion his successors have not only concurred, but they even attach less importance to the variations noted by his careful eye. Dr Nott, for example, remarks on the peculiarities of the very remarkable brachycephalic skull taken from a mound in the Scioto Valley, and figured the natural size in Messrs Squier and Davis's *Ancient Monuments of the Mississippi Valley* :* "Identical characters pervade all the American race, ancient and modern, over the whole continent. We have compared many heads of living tribes, Cherokees, Choctaws, Mexicans, &c., as well as crania from mounds of all ages, and the same general organization characterizes each one."†

One more authority may be quoted to show that the conclusions thus early adopted by Dr Morton, and maintained and confirmed by his subsequent writings, are still regarded

* Smithsonian Contributions to Knowledge, vol. i. pl. 47.

† Types of Mankind, p. 291.

8 *On the Supposed Prevalence of One Cranial Type*

as among the best established and most indisputable summaries deduced from the well-ascertained data of American Ethnology. Dr J. Aitken Meigs, the editor of Dr Morton's "Catalogue of Skulls," subsequent to the transference of his greatly augmented collection to the Academy of Natural Sciences of Philadelphia, remarks, in his *Cranial Characteristics of the Races of Men*: "Through *Crania Americana*, it has long been known to the scientific world that a remarkable sameness of osteological character pervades all the American tribes from Hudson's Bay to Terra del Fuego. It is equally well known that the researches of Humboldt and Gallatin have demonstrated a conformity not less remarkable in the language and artistic tendencies of these numerous and widely scattered aborigines."*

Such, then, is the opinion honestly arrived at by Dr Morton, as the result of extensive study and observation, accepted and confirmed by his successors, and now made the starting-point from whence to advance to still more comprehensive and far-reaching conclusions. It is not necessary, therefore, to prove the universal recognition of this well-known ethnological postulate, by farther references to recent authorities; but there is one author, at once so distinguished among American men of science, and so peculiar from the point of view from which he has regarded the entire question of American Ethnology, as to merit special attention,—Professor Agassiz, in his *Sketch of the Natural Provinces of the Animal World, and their relation to the different Types of Man*, re-affirms the homogeneous characteristics and ethnic insulation of the American Indian on entirely novel and independent grounds. After defining the evidence on which the general opinion is based, that *the boundaries within which the different natural combinations of animals are circumscribed on the surface of the earth coincide with the natural range of distinct types of man*, he proceeds to show that America, including both its northern and southern continent, differs essentially from Europe and Asia, or Africa, in being characterized throughout by a much greater uniformity in all its natural productions,

* *Indigenous Races of Men*, p. 332.

than anything which comparison enables us to trace in the Old World. He then adds: "With these facts before us, we may expect that there should be no great diversity among the tribes of man inhabiting this continent; and indeed the most extensive investigation of their peculiarities has led Dr Morton to consider them as constituting but a single race, from the confines of the Esquimaux down to the southernmost extremity of the continent. But, at the same time, it should be remembered that, in accordance with the zoological character of the whole realm, this race is divided into an infinite number of small tribes, presenting more or less difference one from another."

The latest views of Agassiz, as set forth in his contribution to the *Indigenous Races of the Earth*, present us with the same opinions, advanced with additional confirmation from other data. Passing from the general zoological analogies in the distribution of species, to the special one of the monkey, he remarks on the diversity of opinions among men of science as to the genus *Cebus*, which some zoologists recognise as one species, others separate into two or three, while others again subdivide it into as many as ten:—"Here we have, with reference to one genus of monkeys, the same diversity of opinion as exists among naturalists respecting the races of man. But in this case the question assumes a peculiar interest, from the circumstance that the genus *Cebus* is exclusively American; for that discloses the same indefinite limitation between its species which we observe also among the tribes of Indians, or the same tendency to splitting into minor groups, running really one into the other, notwithstanding some few marked differences,—in the same manner as Morton has shown that all the Indians constitute but one race, from one end of the continent to the other. . . . In the Old World, notwithstanding the re-occurrence of similar phenomena, the range of variation of species seems less extensive, and the range of their geographical distribution more limited. In accordance with this general character of the animal kingdom, we find likewise that, among men, with the exception of the Arctic Esquimaux, there is only one single race of men extending over the whole range of North and South

10 On the Supposed Prevalence of One Cranial Type

America, but dividing into innumerable tribes; whilst, in the Old World, there are a great many well-defined and easily distinguished races, which are circumscribed within comparatively much narrower boundaries." To this may be added Mr Gliddon's summary of the views advanced by him, in carrying out the suggestive idea of Agassiz, in the *Monogenists and Polygenists* of the former :*—"We may now reconsider some of the practical issues of this inquiry. It has been shown, 1st, That in America, humatile men and humatile monkeys occupy the same palæontological zones. 2d, That whilst all such remains of man are exclusively of the American Indian type, the monkeys called *Hapale*, *Cebus*, *Cal-lithrix*, &c., are equally 'terræ geniti' of this continent. Finally, that *permanence of type*, as well for humanity as for simiadae, is firmly established in both genera, from the hour in which we are living back to a vastly remote, if not incalculable, era of unrecorded time."

Such being some of the very important and comprehensive deductions now based on the premises originally advanced by Dr Morton, it becomes of some interest to the Ethnologist to ascertain if these premises are so surely established as to be beyond all question. That some of the assumed evidence of this all-pervading conformity has been adopted on insufficient data, is manifest from the premature generalizations in relation to the holoprastic or polysynthetic character affirmed to pertain to all the languages and dialects of America, and assumed to supply the place of that grammatical unity of structure in the Indo-European languages, the establishment of which has led to such important results.

The dialects of the numerous families of American tongues multiply with the labours of their investigators. Duponceau, writing in 1822, numbered them as one thousand two hundred and fourteen. Scarcely any trace of the roots of a common vocabulary helps in the comparison of many of these diverse languages of the New World. Of some of the indigenous tongues even now spoken around the Rios and Colorado, and in more southern latitudes, the holoprastic attribute is rather

* Indigenous Races of Men, p. 522.

assumed than known ; and in more than one group, of which the Carib is an illustration, languages are found in nearly all the lowest stages of undeveloped simplicity. Nevertheless, this holophrastic or polysynthetical mode of condensing a group of words into one abbreviated term, susceptible of further modification ; and of inflexion, is well worthy of the interest it has excited. This distinguishing trait, or " plan of thought of the American languages," as Dr Lieber has designated it, has yet to be applied as a philological test to many untried tongues and dialects of the New Continent ; but meanwhile, some of the most comprehensive generalizations based on it seem to have been advanced in the inverse ratio of the linguistic knowledge of their advocates. Those most fitted to pronounce on the subject—as Duponceau, in his later writings, and Gallatin—most cautiously avoid general conclusions, such as the former was tempted to by earlier and less complete observations ; and, as in many other inquiries, extended knowledge tends at present to complicate the question, instead of confirming the seductive theory of Duponceau, of a common philological character pervading the languages of America from Greenland to Cape Horn.

The extreme interest which attaches to the investigation of the distinguishing traits already recognised as pertaining to the languages of the New World cannot be over-estimated, though it is not improbable that an exaggerated value has been assigned to the significance of their specialties. In more than one trait characteristics are recognised common both to Polynesian and African idioms ; and further consideration suggests the probability that the special synthetic tendency pertains fully as much to an immature stage of development of those languages as to any specific individualizing feature born of the New World's insulation. As, moreover, the opinion advanced by Gallatin, after mature investigation, of the correspondence of the Esquimaux language to those of the true Indians of America, in the same degree that these possess elements in common, is acknowledged to be correct ; the assumed philological unity of the American Indians amounts to no more than a predominance of certain linguistic tendencies analogous to such as, in the Old World, embrace a widely varied ethnic and

12 *On the Supposed Prevalence of One Cranial Type*

geographic area. "Physically," says Latham, "the Esquimaux is a Mongol and Asiatic; philologically he is American, at least in respect to the principles upon which his speech is constructed."*

The same manifestation of a predisposed tendency to shape the evidence to a foregone conclusion, or to assume as special whatever varies from the normal type, may be traced in various other lines of argument; such as, for example, where, in proof of the essential ethnic difference between the Esquimaux and the true Indian of America, the traveller Herne is quoted as stating that "The Indian tribes who are their proximate neighbours on the south once excused an unprovoked massacre of Esquimaux men, women, and children, by asserting that they were a people of a different nature and origin from themselves." Such a line of argument would prove other tribes, besides the Esquimaux, to be of a different nature and origin. Similar evidence, indeed, might suffice to show that the Anglo-Saxons of the ancient kingdom of Northumbria, so soon as they were separated by the political boundary line of the Sark or Tweed, became essentially different races; for assuredly no Indians and Esquimaux could manifest more deadly hatred to each other than that which intensifies the wild vigour of the old Border Minstrelsy.

But it is not necessary to go beyond the American pale for similar evidences. The Guanches, discovered by Columbus in 1492, attracted his attention by their gentle manners and inoffensive habits, and from them he learned of the Caribs, a fierce and warlike people in the neighbouring islands and the mainland, of whom they lived in constant dread, and who subsequently became familiar to the Spaniards as a ferocious, crafty, and revengeful race, delighting in cannibalism.

Moreover, the great Admiral failed not to note the marked distinction between the fair complexion of the Guanches and the reddish-olive of the ferocious Caribs. Both Humboldt and Morton acknowledge the existence of considerable varieties in colour and complexion, from nearly white to a dark brown. The latter writer, indeed,—guarding against possible deductions

* *Varieties of Man*, p. 290.

from such an admission, adverse to his favourite theory of a universally predominating conformity in all the essential characteristics of the American aborigines,—adds: “These differences in complexion are extremely partial, forming mere exceptions to the primitive and national tint that characterizes these people from Cape Horn to the Canadas. The cause of these anomalies is not readily explained; that it is not climate is sufficiently obvious; and whether it arises from partial immigrations from other countries, remains yet to be decided.”*

The stronghold, however, of the argument for the essential oneness of the whole tribes and nations of the American continent, is the supposed uniformity of physiological, and especially of physiognomical and cranial characteristics; an ethnical postulate which has not yet, so far as I am aware, been called in question.

On first visiting the American continent, and enjoying the opportunity of judging for myself of the physical characteristics of the aboriginal race of the forests, I did so under the full conviction of meeting with such a universal approximation to the assumed normal type as would fully bear out the deductions of previous observers, and especially of one so persevering in the accumulation of the requisite materials on which to base a legitimate result, as the author of the *Crania Americana*. I visited Philadelphia with a special view to examine the valuable collection of Crania formed by Dr Morton, and looked with lively interest on some of the most striking illustrations which it affords of the typical form assigned by him to the American race. Unfortunately, at the period of my visit (September 1853), extensive alterations in progress on the buildings of the Academy deprived me of the opportunity for such detailed observations as were requisite for drawing any just comparison between these data and the comprehensive deductions founded on them by their collector. When, therefore, I proceeded more recently to open some Indian graves in Canada, and to endeavour to procure crania from others on ascertaining of their disturbance, it was solely with a view to possess myself of one or two specimens of the peculiar American

* *Crania Americana*, p. 70.

14 *On the Supposed Prevalence of One Cranial Type*

type of cranium, which possessed a special interest in my eyes from its approximation to the ancient brachycephalic skull, familiar to me, as found in one important class of early British barrows. It was accordingly, simply with a sense of disappointment that I found the results of repeated efforts, in different localities, supplied me with crania which, though undoubtedly Indian, exhibited little or no trace of the rounded form, with short longitudinal diameter, so strikingly apparent in the ancient crania of Central America and the Mounds. Appreciating, as I did, the invaluable labours of Dr Morton,—which will be more fully prized as the important science they tend to elucidate commands a wider attention and more careful study,—it did not occur to me at first to question any of the results so frequently reiterated by him, and repeatedly confirmed by the concurrence of later writers. Slowly, however, the idea has forced itself upon me, that, to whatever extent the affirmed typical form of the American cranium is found to prevail in other parts of the continent, the crania most frequently met with along the north shores of the great lakes are deficient in some of its most essential elements.

In order to institute such a comparison as will satisfactorily test this question, it is necessary to define the essential requisites of the American type of cranium; for neither Dr Morton nor his successors have overlooked the fact of some deviation from the supposed normal type, not only occurring occasionally, but existing as a permanent characteristic of certain tribes, including those to which I have more particularly to refer. Dr Morton recognised a more elongated head as pertaining to certain tribes, of which he names the Lenapé stock, the Iroquois, and the Cherokees, to the east of the Alleghany Mountains; and the Mandans, Ricaras, and Assinaboins, to the west. But such elongation he speaks of as a mere slight variation from the more perfect form of the normal skull; and he adds: “even in these instances the characteristic truncation of the occiput is more or less obvious.”* So also Dr Nott, after defining the typical characteristics of the American cranium, remarks,—“Such are more universal in the Toltecan than the

* *Crania Americana*, p. 69.

barbarous tribes. Among the Iroquois, for instance, the heads were often of a somewhat elongated form, but the Cherokees and Choctaws, who, of all barbarous tribes, display greatest aptitude for civilization, present the genuine type in a remarkable degree. My birth and long residence in southern states have permitted the study of many of these living tribes, and they exhibit this conformation almost without exception. I have also scrutinized many Mexicans, besides Catawabas of South Carolina, and tribes on the Canada Lakes, and can bear witness that the living tribes everywhere confirm Morton's type."*

We cannot err in taking the very interesting cranium found by Dr Davis and Mr Squier in a mound in the Scioto Valley, Ohio, as an example of the true typical head ; for it is produced as such by Dr Nott, in the "Types of Mankind," and it is described, in the words of Dr Morton, in Dr Meigs's *Catalogue of Human Crania, in the collection of the Academy of Natural Science of Philadelphia*, issued during the present year by order of the Academy, as—"an Aboriginal American ; a very remarkable head. This is, perhaps, the most admirably formed head of the American race hitherto discovered. It possesses the national characteristics in perfection, as seen in the elevated vertex, flattened occiput, great interparietal diameter, ponderous bony structure, salient nose, large jaws, and broad face. It is the perfect type of Indian conformation, to which the skulls of all the tribes from Cape Horn to Canada more or less approximate." As shown by the front view of this skull it presents no trace of pyramidal conformation.

Of this skull the measurements which involve the most essential typical elements, and so furnish precise materials for comparison, are,—

| | |
|-------------------------------|-------------|
| Longitudinal diameter | 6·5 inches. |
| Parietal " | 6 " |
| Vertical " | 6·2 " |
| Intermastoid arch | 16 " |
| Horizontal circumference..... | 19·8 " |

So that, in fact, the cranium very closely corresponds in its

* Types of Mankind, p. 441.

measurements in length, breadth, and height. Still further, it may be noted, on examining the full-sized view of the skull, as given by Messrs Squier and Davis (Pl. XLVII.) that the singular longitudinal abbreviation of this skull is nearly all posteriorly. A line drawn through the meatus auditorius externus in profile, parallel to the elevated forehead, divides it into two unequal parts, of which the anterior and posterior parts are nearly in the ratio of two to one. To this type the ancient Peruvian and Mexican crania unquestionably approximate. Of one of the former, from the Temple of the Sun, (Pl. XI.) Dr Morton remarks: "A strikingly characteristic Peruvian head. As is common in this series of skulls, the parietal and longitudinal diameters are nearly the same;" viz., longitudinal diameters 6.1, parietal diameter 6. So far, therefore, as such evidence goes, it appears to justify the conclusion arrived at by Dr Morton, that the people represented by the Mound skulls in his possession "were one and the same with the American race, and probably of the Toltecan branch."*

The conformity affirmed to exist between the ancient Mexican and Peruvian skulls, and those of the modern barbarous tribes, may also be so far asserted as a partial approximation in relation to some of them, and appears to receive a fuller confirmation when carefully selected examples are referred to; as a sufficient number occur to indicate the occasional re-appearance of some of the most striking typical peculiarities. Such re-appearance of the extremest typical forms is not, however, peculiar to this continent. I possess measurements of a singular modern (female) skull in the collection of Dr John Struthers of Edinburgh, which reproduces in all its strongest features the ancient British brachy cephalic head; and I have in view more than one living illustration of the same sort:—one, for example—a gentleman of education and intelligence—with such an elevation of the vertex, flattened occiput, and short longitudinal diameter, as, judging by the eye, would more nearly approach the measurement of the Scioto Mound cranium than that of any living Indian I have seen.

Of a similar nature is the correspondence pointed out by

* *Crania Americana*, p. 229.

Dr Nott* between the Scioto Mound skull and that of a Cherokee chief who died a prisoner near Mobile in 1837. In this example, in so far as can be judged from the comparison of both by drawings in profile without precise measurements, the points of agreement are indisputable, though even here amounting to no more than an approximation. The vertical occiput of the ancient skull—more markedly vertical in the original drawing than in the small copy—is only partially represented in the other; the square form of the ancient profile in the coronal region, becomes conoid in the modern one; and the intersecting line drawn through the meatus auditorius externus shows a very partial reproduction in the modern example of the remarkable preponderance of posterior cerebral development, which—if not produced by artificial means—is the most singular characteristic of the ancient head.

But while acknowledging such approximation of the selected modern Cherokee cranium to the ancient type, neither the legitimate deductions following from this, nor from the other examples referred to by Dr Nott, appear to bear out his conclusions, that not only that type “is found among tribes the most scattered, among the semi-civilized and the barbarous, among living as well as among extinct races;” but “that *no foreign race has intruded itself in their midst, even in the smallest appreciable degree.*” The examples of Cherokee heads referred to in the Table of Anatomical Measurements in the *Crania Americana*, in so far as they fairly represent the cranial characteristics of this tribe or nation, seem to indicate that the Mobile chief is an exceptional case; and this is further borne out by the special example selected by Dr Morton, and figured in his great work: “The head of a Cherokee warrior who was known in the army by the name of John Waring.” The following are its most characteristic measurements, exhibiting such a wide divergence from the normal type, as illustrated in that of the Scioto Mound, as to substitute contrast for comparison:—

| | |
|----------------------------|-----|
| Longitudinal diameter..... | 7.2 |
| Parietal „ | 5.3 |

* Types of Mankind, p. 442.

18 *On the Supposed Prevalence of One Cranial Type*

| | |
|--------------------------------|------|
| Vertical diameter | 5.3 |
| Intermastoid arch | 14.1 |
| Horizontal circumference | 19.1 |

In the typical head the longitudinal, parietal, and vertical diameters closely correspond; in this the excess of the longitudinal over the parietal and vertical diameters is such as is rarely exceeded in the modern Anglo-Saxon, or even the longer sub-Celtic head. Yet, that such an excess in the longitudinal diameter did not present to the experienced eye of Dr Morton any striking deviation from the form of the modern Indian head is proved by his noting of this very example: "Nor is there anything remarkable in the form of the skull."

Bearing in remembrance, then, the partial nature of the approximation so far apparent between the ancient and modern American cranium, personal observation leads me to believe that such is to be found,—with exceptional instances of closer affinities, and also with important divergences from the typical Indian form and character, not exceptional, but pertaining to the whole nation,—among the still numerous examples of the Algonquin stock, as represented by the Chippeways. Of these I have examined, and compared by the eye, many at widely scattered locations: on Lake Simcoe and the Georgian Bay; at Mackinaw in Lake Huron, and at Sault St Marie; at Ontonagon, La Point, the Apostle Islands, and the St Louis River, on Lake Superior; as well as those encountered in such chance opportunities as occur in the neighbourhood of Niagara Falls, and on the streets of our Canadian towns and villages. Physiognomically they present the wide and prominent mouth, high cheek-bones, and broad face, so universally characteristic of the American Indian; but they by no means present in a remarkable degree the wide and massive lower jaw, which has been noted as of universal occurrence among the Red Indians. Still more noticeable is the absence of the aquiline nose, so characteristic generally of the true Indian in contradistinction to the Esquimaux. The eye may be fully depended on for physiognomical characteristics; it is of much less value in testing variations from any assumed cranial type, especially in reference to comparatively minute divergences of measurement. Nevertheless, their heads appear to me to be essentially

brachycephalic, as compared with those of other tribes in part displaced by them ; but—in so far as may be judged from the observation of the living head covered with the thickly matted and long coarse hair of the Indian—they are not remarkable for vertical elevation.

It is by no means an easy thing to obtain actual measurements of Indians' heads. I have seen an Indian not only resist every attempt that could be ventured on, backed by arguments of the most practical kind ; but on the solicitation being pressed too urgently, he trembled, and manifested the strongest signs of fear, not unaccompanied with anger, such as made a retreat prudent. In other cases, where the Indian has been induced to submit his head to examination, his squaw has interfered and vehemently protested against the dangerous operation. The chief object of dread seems to be lest thereby the secrets of the owner should be revealed to the manipulator : but this rather marks the more definite form of apprehension in the mind of the Christianized Indian. With others it is simply a vague dread of power being thereby acquired over them ; such as Mr Paul Kane informs me frequently interfered to prevent his taking the portraits of the Indians of the North-West, unless by stealth.

Table I.—Cranial Measurements.—(Chippeways.)

| | Longitudinal Diam. | Parietal Diam. | Frontal Diam. | Inter-mastoid Arch. | Horizontal Circumf. |
|-------------------------------------|--------------------|----------------|---------------|---------------------|---------------------|
| 1. Joseph Shilling | 7.5 | 6.1 | 5.6 | 14.4 | 22.9 |
| 2. James Inglesol (Kobsequan) .. | 7.4 | 6. | 5. | 14.8 | 22.3 |
| 3. Jac. Crane (Now-keise-gwab) ... | 7.1 | 6. | 5.4 | 15.4 | 22.1 |
| 4. Peter Jacobs (Pah-tah-se-ga) ... | 7.3 | 5. | 5.4 | 15. | 22.6 |
| 5. Jacob Shilling | 6.9 | 6. | 5.1 | 14.7 | 22. |
| 6. William Snake | 7.1 | 6. | 5.5 | 15.1 | 22. |
| 7. Crania Americana, No. 683..... | 7.3 | 5.8 | 4.8 | 15.1 | 20.9 |
| 8. Crania Americana, No. 684..... | 7.2 | 5.5 | 4.3 | 14.8 | 20.2 |

The preceding table presents the results of an examination of six pure-breed Chippeways, at the Indian reserve on Lake Couchiching ; with the addition of two others, the only examples of the same nation, given by Morton, in the *Crania Americana*. From these it will be seen that, while in the majority of them a certain approximation of the longitudinal to the parietal diameter is discernible, it is of a very partial nature, except in one instance (No. 5), where a manifest corre-

spondence to certain relative proportions of the Mound-builder type of head is apparent.

Some of the measurements in the living head are necessarily affected by the hair, always coarse and abundant in the Indian. Others again, such as the vertical diameter, cannot be taken; but the mastoid processes are sufficiently prominent to leave very little room for error in the measurement of the intermastoid arch; and this suffices to show the very exceptional approximation of the modern Chippeway head—in so far as it is illustrated by these examples—to the ancient type, in the proportional elevation of the vertex. In the horizontal circumference some deduction must be made for the hair, to bring it to the true cranial measurement in all the six living examples.

I have selected the Chippeways for reference here, because—taking the above measurements, along with other observations—they appear to indicate a nearer approach to some of the assumed characteristics of the American cranial type, in this widely-spread branch of the Indian stock, than is observable in other Northern races, and especially than is apparent on an examination of skulls belonging, as I believe, to the original Huron occupants of the greater part of the country around Lakes Simcoe and Couchiching, where the Chippeways more especially referred to are now settled, including Upper Canada when first explored.

But the divergent characteristics noticeable in these, and still more in the crania of older Canadian graves, are by no means confined to those named, as a few examples will suffice to show. Such a radical divergence from the assumed normal type as has been already noted in Dr Morton's selected Cherokee cranium is no less obvious in that of the Miami,—the head of a celebrated chief, eloquent, of great bravery, and uncompromising hostility to the Whites. (*Crania Americana*, p. 182.)

| | |
|--------------------------------|------|
| Longitudinal diameter | 7.3 |
| Parietal diameter | 5.5 |
| Vertical diameter | 5.5 |
| Intermastoid arch | 14.5 |
| Horizontal circumference | 19.8 |

In the example of the Potawatomes, "A skull of a genuine

Potowatomic, remarkable for its capacity behind the ears." (Ib. p. 186.)

| | |
|--------------------------------|------|
| Longitudinal diameter | 7.8 |
| Parietal diameter | 5.7 |
| Vertical diameter | 5.3 |
| Intermastoid arch | 16.0 |
| Horizontal circumference | 22.1 |

In that of the Blackfeet, the largest of two brought to Philadelphia by Catlin, and noted by Dr Morton for its great breadth between the parietal bones, it is also very markedly pyramidal. Nevertheless, here also the longitudinal diameter is nearly two inches in excess both of the parietal and vertical diameters. (Ib. 202.)

| | |
|--------------------------------|------|
| Longitudinal diameter | 7.1 |
| Parietal diameter | 5.4 |
| Vertical diameter | 5.1 |
| Intermastoid arch | 13.8 |
| Horizontal circumference | 19.9 |

So also Dr Morton says of the Menominees: "I have received a series of Menominee skulls, embracing eight specimens. They are something larger than the average of Indian crania; and although for the most part they present a *rather oval shape*, they are all marked by a gently flattened occiput." (Ib. 179.) A reference to the Catalogue of the Morton Collection at Philadelphia discloses the important fact that of those marked by the shorter longitudinal diameter, Nos. 35, 44, and 563, are females.

Again of the Delawares he remarks: "The few Delaware skulls in my possession are more elongated than is usual in the American tribes; they are also narrower in proportion in the parietal diameter, and less flattened on the occiput."

Such are some indications of data,—derived from a source altogether unexceptionable in the present argument,—which seem to render it impossible to uphold the views so repeatedly affirmed, of the physiognomical, physiological, and, above all, the cranial unity characterizing the whole ancient and modern aborigines of the New World.

I omit, meanwhile, any reference to the characteristics ascribed by Dr Morton to the Iroquois and Hurons or Wyandots: those tribes to whom, with the greatest probability, may

be assigned the crania specially examined by me, found along the shores of Lake Ontario, the north shore of Lake Erie, and on Lake Huron. When Champlain effected permanent settlements on the Lower St Lawrence in 1608, he found the north shores of the river occupied, below Quebec, by the Montagnets or Montagnards, and above it by the Ottawas, and other branches of the Algonquin stock. The country to the westward, constituting the great Canadian peninsula lying between Georgian Bay, the Lakes Huron, Erie, and Ontario, was chiefly, if not entirely, in the possession of the Hurons; while the Iroquois—to whom the latter were most nearly allied in social and physical characteristics, though at deadly enmity with them—occupied the south bank of the St Lawrence, and had their chief villages scattered among the clustering lakes, and the rivers, on the southern shore of Lake Ontario, which they continued to occupy and cultivate till driven out or exterminated in the revolutionary wars. The Iroquois and the Huron tribes were alike distinguished from many others, and especially from the neighbouring hunter tribes of the Algonquin nations, by considerable attention to cultivation, and by living permanently in large settled villages. But the Iroquois wars effectually arrested the progress of agriculture, and at length eradicated or drove out the Hurons from their country between Georgian Bay and Lake Ontario, where they were replaced by rude Algonquin tribes formerly lying to the north of them.

The Hurons, then, and in very modern years the Algonquins, but more especially the former, are the occupants of the country immediately to the north of Lakes Erie and Ontario, whose remains are to be looked for in the Indian graves of this district. Of these tribes Latham remarks: "The Iroquois and Algonquins exhibit in the most typical form the characteristics of the North American Indians, as exhibited in the earliest descriptions, and are the two families upon which the current notions respecting the physiognomy, habits, and moral and intellectual powers of the so-called Red Race are chiefly founded."* In many respects, however, they presented a striking contrast. The Algonquin stock, represented by the modern Chippeways,

* *Varieties of Mankind*, p. 333.

is only known to us as embracing rude and savage hunter tribes; and both physically and intellectually the Chippeways were inferior to the Iroquois and Hurons. The latter displayed a manifest aptitude for civilization. In war they repeatedly effected and maintained extensive and powerful combinations. Their agricultural operations gave proof of a systematic and continuous cultivation of the soil. Corn, especially, was grown to a great extent. Tobacco also was so extensively cultivated by one of the tribes of Upper Canada as to lead to its designation by the French Jesuit Missionaries of the seventeenth century as the *Petunians*, or Tobacco Growers. Moreover, their knowledge and practice of agriculture appear to have originated independently of all European influence; and but for their fatal involvement in the struggle between the colonists and the representatives of the mother country, there seemed a reasonable prospect of such an Iroquois civilization being developed in the western districts of the state of New York, as might have enabled these representatives of the ancient owners of the soil to share in the gradual advancement of European arts and progress, instead of being trodden under heel in the march of civilization.*

Of Indian skulls dug up within the Canadian district once pertaining to the Huron or Wyandot branch of the Iroquois stock, I had observed and cursorily examined a considerable number before my attention was especially drawn to the peculiar characteristics now under consideration, owing to my repeated rejection of those which turned up, as failing to furnish specimens of the assigned typical American head. Since then I have carefully examined and measured twenty-nine Indian skulls, with the following results:—

* La Hontan estimated the Iroquois, when first known to Europeans, at 70,000. At the present time they number about 7000, including those in Canada; and they still exhibit traces of the superiority which once pertained to them in comparison with other Indian tribes. The very name of a Mohawk still fills with dread the lodges of the Chippeways; and the Algonquin Indians settled on the Canadian reserves on Lake Couchiching and Rice Lake have been known repeatedly to desert their villages, and camp out in the woods, or on an island, from the mere rumour of a Mohawk having been seen in the vicinity.

24 *On the Supposed Prevalence of One Cranial Type*

Table II.—*Cranial Measurements.—Western Canada (Hurons.)*

| | | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. |
|----|-----------------------|----------------|------------------|----------------|------------------|--------------------------|--------------------------|---------------------------|---|------------------------------------|
| | | Long. Diam. | Pariet. Diam. | Front Diam. | Vertic. Diam. | Inter- mast. Arch. | Inter- mast. Line. | Occip. front. Arch. | Do from Occiput to root of nose. | Horiz. cir- cumfer- ence. |
| 1 | Orillja | 7.5 | 5.7 | 4.5 | 5.6 | 15.6 | 4.25 | 15. | 13. | 21.1 |
| 2 | do. | 7.4 | 5.5 | 4.4 | 5.4 | 14.7 | 4.5 | | 12. | 20.6 |
| 3 | Oakridges | 7.6 | 5.5 | 4.7 | 6. | 15.7 | 4.6 | 15. | 13.7 | 21.2 |
| 4 | do. (Female) ... | 6.8 | 4.8 | 4.2 | 5. | 13.6 | 4. | 13.2 | 11.3 | 18.9 |
| 5 | Windsor | 6.6 | 5.3 | 4.2 | 5.5 | 14.5 | 4.2 | 13.5 | 12.2 | 19. |
| 6 | Peterborough | 7.7 | 5.5 | 4.9 | 5.3 | 15.4 | 4.6 | 15. | 13.5 | 21.1 |
| 7 | Windsor | 7. | 5.7 | 4.7 | 5.7 | 15.2 | 4.3 | 14.5 | 12.9 | 20.1 |
| 8 | do. | 7. | 5.7 | 4.5 | 5.7 | 16.1 | 4. | 14.4 | 12.4 | 20.1 |
| 9 | do. | 7.4 | 6.1 | 4.9 | 5.7 | | 4.5 | 15.5 | 13.4 | 21.4 |
| 10 | Penetanguishene | 7.8 | 5.6 | 4.6 | 5.9 | 15.5 | 4.5 | 15.6 | 13.5 | 21.3 |
| 11 | Barrie | 6.6 | 6.4 | 5.2 | 5.3 | 16. | 4.6 | 14.4 | 12.1 | 20.7 |
| 12 | Burlington Bay | 7. | 5.25 | 4.4 | 5.3 | 14. | 4. | 13.6 | 11.9 | 19.5 |
| 13 | do. do. | 7.6 | 5.6 | 4.4 | 5.4 | 15.2 | 4.2 | 14.9 | 12.9 | 20.9 |
| 14 | Burwick | 7.2 | 5.1 | 4.4 | 5.6 | 14.3 | 4.3 | 14.7 | 12.4 | 21. |
| 15 | Tecumseth | 7.3 | 5.6 | 4.4 | 5.5 | 14.5 | 4.9 | 14.4 | 12.5 | 20.25 |
| 16 | do. (Female) ... | 7.2 | 5.2 | 3.9 | 5. | 14.1 | 3.6 | 14.25 | 12.9 | 19.7 |
| 17 | do. | 7.9 | 6. | 4.6 | 5.7 | 16. | 3.4 | 16.1 | 14.2 | 22. |
| 18 | do. (Female) ... | 7.6 | 5.25 | 4.3 | 5.6 | 14. | 4.1 | 14.25 | 12.6 | 20.2 |
| 19 | do. (Female) ... | 7.5 | 5.2 | 4.1 | 5.1 | 13.4 | 4.2 | 14.8 | 13. | 20.5 |
| 20 | do. | 7.4 | 5.6 | 4.6 | 5.5 | 15. | 4.4 | 15. | 13.6 | 20.9 |
| 21 | do. | 7.6 | 5.4 | 4.2 | 5.7 | 15.1 | 4.4 | 15.3 | 14. | 20.9 |
| 22 | Owen Sound | 7. | 5.5 | 4.2 | 5. | 13.8 | 4. | 14. | 12.2 | 19.8 |
| 23 | do. | 7.3 | 5.3 | 4.25 | 5.25 | 14.4 | 4.2 | 14.25 | 12.4 | 20.4 |
| 24 | do. | 7.2 | 5.4 | 3.8 | 5.25 | 14.5 | 3.9 | 14.2 | 12. | 19.9 |
| 25 | do. | 7.7 | 5.4 | 4.7 | 5.6 | 14.6 | 4.2 | 15. | 13. | 21.4 |
| 26 | Oro | 7.4 | 5.4 | | 4.25 | 15.25 | 4. | 14.9 | 12.4 | 20.4 |
| 27 | Owen Sound | 7.5 | 5.9 | 5.1 | 5.5 | 15. | 4.25 | 15.6 | 13.3 | 21.8 |
| 28 | do. | 7.6 | 5.5 | 4.5 | 5.4 | 14.6 | 4.5 | 14.9 | 13.1 | 21.3 |
| 29 | Oro | 7.5 | 5.6 | 4.4 | 5.5 | 15.6 | 4.3 | 15.2 | 13. | 21.4 |

1. Only three exhibit such an agreement with the American type, as, judged by the eye, to justify their classification as true brachy-cephalic crania. One of these (No. 11), a very remarkable and massive skull, was turned up at Barrie, on Lake Simcoe, with, it is said, upwards of two hundred others. It differs from all the other Indian crania in exhibiting the vertical occiput so very strikingly, that, when laid resting on it, it stands more firmly than in any other position. Of the Scioto Valley cranium, Dr Morton remarks, in reference to the occiput: "Similar forms are common in the Peruvian tombs, and have the occiput, as in this instance, so flattened and vertical, as to give the idea of artificial compression; yet this is only an exaggeration, of the natural form, caused by the pressure of the cradle-board in common use among the American nation." I think it extremely probable that further investigation will tend to the conclusion that the vertical or flattened occiput, instead of being a typical characteristic, pertains entirely to

the class of artificial modifications of the natural cranium familiar to the American Ethnologist alike in the disclosures of ancient graves, and in the customs of widely separated living tribes. In this I am further confirmed by the remark of Dr Morton, in reference to the Peruvian crania: "These heads are remarkable, not only for their smallness, but also for their irregularity; for in the whole series in my possession there is but one that can be called symmetrical. This irregularity chiefly consists in the greater projection of the occiput to one side than the other, showing in some instances a surprising degree of deformity. As this condition is as often observed on one side as the other, it is not to be attributed to the intentional application of mechanical force; on the contrary, it is to a certain degree common to the whole American tribes, and is sometimes, no doubt, increased by the manner in which the child is placed in the cradle."* To this Dr Morton subsequently added the further remark, in describing an unsymmetrical Mexican skull: "I had almost omitted the remark, that this irregularity of form is common in, and peculiar to, American crania."† The latter remark, however, is too wide a generalization. I have repeatedly noted the like unsymmetrical characteristics in the brachycephalic crania of the Scottish barrows; and it has occurred to my mind, on more than one occasion, whether such may not furnish an indication of some partial compression, dependent, it may be, on the mode of nurture in infancy, having tended, in their case also, if not to produce, to exaggerate the short longitudinal diameter, which constitutes one of their most remarkable characteristics. In the case of the Barrie skull, there can be little doubt that the flattened occiput is the result of artificial compression, of a much more decided nature than that of the cradle-board of the Papoose. It is not undeserving of notice here, that the example selected by Cuvier, among his "crania pertaining to the four principal types of the human species," to illustrate the American race, exhibits a strikingly marked prolongation of the occiput. It is described as: "*Crâne trouvé dans une caverne, près du Village de Maïpuré près des bords de l'Orénoque; rapporté*

* *Crania Americana*, p. 115.

† *Types of Mankind*, p. 444

par M. de Humboldt ;** and so far suffices to indicate in how far the opinion already quoted from Humboldt's *Researches* coincides with his own independent observations.

2. In addition to what has been above remarked in reference to the probable artificial origin of the supposed typical form of occiput, assigned by Dr Morton to the whole American race, I am struck, in the majority of the examples examined, with the total absence of any approximation to the flattened occiput. Fifteen of the crania referred to exhibit a more or less decided posterior projection of the occiput, twelve of these markedly so, and seven of them present such a prolongation of it as constituted one of the most striking features in one class of ancient Scottish crania, which chiefly led to the suggestion of the term *Kumbo-cephalic*† as a distinctive term for them.

3. The tendency to the pyramidal form, occasioned by the angular junction of the parietal bones, is apparent in the majority of the skulls examined. I have noted its occurrence more or less prominently in fourteen crania, of which five exhibit a strongly-marked pyramidal form, extending to the frontal bone. In some, however, it is only slightly indicated, while in several it is totally wanting.

4. I am further struck with the frequency of the very partial projection, and in some examples the total absence of the super-ciliary ridge, a characteristic which I am not aware has been noted before. In six of the skulls carefully noted by me this is particularly manifest, and, along with their pyramidal vertex and predominant longitudinal diameter, suggests affinities, hitherto overlooked, with the *Esquimaux* form of skull.

5. I would also note that, whereas Dr Morton states, as the result of his experience, that the most distant points of the parietal bones are, for the most part, the protuberances, I have only found such to be the case in two out of twenty-nine Canadian skulls. The widest parietal measurement is generally a little above the squamous suture.

6. The occurrence may also be noted in several of these crania, of *Wormian* bones, of such regularity of form and position as to constitute indications at least, seemingly confirmatory of

* Cuvier : " *Le Regne Animal.*" *Races Humaines*, planches 1 et 2, pl. 8, fig. 2.

† *Prehistoric Annals of Scotland*, p. 109.

the supposed tendency to the development of an *interparietal*, or *super-occipital* bone, first pointed out by Dr Bellamy. This, which is a permanent cranial characteristic in some of the mammalia, is regarded by Dr Tschudi as an osteological feature peculiar to the Peruvians, and is, he affirms, traceable in all the skulls of that race.

The table of measurements of skulls procured from Indian cemeteries to the north of Lakes Erie and Ontario (Table II.), supplies some, at least, of the elements essential to the formation of a sound judgment on the question under consideration. It embraces twenty-nine examples. To these I have added, in another table (Table III.), the corresponding measurements of the skull of the celebrated Mohawk chief, Joseph Brant (Tayendanaga), from a cast taken on the opening of his grave, at the interment of his son, John Brant, in 1852. I have also further added, from the *Crania Americana*, the Iroquois and Huron examples given there, which, it will be seen, agree in the main with the results of my own independent observations; while a comparison of the two tables will be satisfactory to those who may not unnaturally hesitate to adopt conclusions, based on the amount of evidence produced, adverse to opinions re-affirmed under such various forms by so high an authority as Dr Morton, and adopted and made the basis of such comprehensive inductions by his successors.

Table III.—Cranial Measurements.—Six Nations.

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. |
|-----------------------------|-------------|---------------|--------------|---------------|-------------------|-------------------|---------------------|-----------------------------------|-----------------------|
| | Long. Diam. | Pariet. Diam. | Front. Diam. | Vertic. Diam. | Inter-Mast. Arch. | Inter-Mast. Line. | Occip. front. Arch. | Do. from Occiput to root of nose. | Horiz. circumference. |
| Mohawk: Brant | 7.8 | 6. | 5. | ... | 15.6? | ... | ... | 13? | 22. |
| Oncida, Morton, No. 32..... | 7.5 | 5.6 | 4.1 | 5.8 | 14.4 | 4.3 | 14.9 | | 20.8 |
| Cayuga, do. No. 417..... | 7.8 | 5.1 | 4.2 | 5.4 | 14.2 | 4.5 | 15.5 | | 20.8 |
| Huron, do. (Fem.) No. 607 | 6.7 | 5.6 | 4.1 | 5.2 | 14.5 | 3.9 | 14. | | 19.2 |
| Huron, do. No. 15 | 7.2 | 5.3 | 4.3 | 5.5 | 15. | 4.4 | 14.2 | | 19.8 |
| Iroquois, do. No. 16 | 7.5 | 5.5 | 4.5 | 5.7 | 15.2 | 4.5 | 15.1 | | 20.8 |
| Iroquois, do. A.N.S. | 7.1 | 5.4 | 4.2 | 5.3 | 14.3 | 4. | 14.1 | | 20. |

The intimate relations in language, manners, and the traditions of a common descent, between those northern and southern branches of the Iroquois stock, render these two tables, in so far as they present concurrent results, applicable as a common test of the supposed homogeneous cranial characteristics

of the aboriginal American, in relation to the area of the great Lakes. Twenty-nine skulls, such as the first table supplies, or thirty-six as the result of both, may, perhaps, appear to be too small a number on which to base conclusions adverse to those promulgated by an observer so distinguished and so persevering as Dr Morton, and accepted by writers no less worthy of esteem and deference. Still more may these data seem inadequate, when it is remembered that Dr Morton's original observations and measurements embraced upwards of three hundred American skulls. But—in addition to the fact that the measurements now supplied are only the more carefully noted data which have tended to confirm conclusions suggested by previous examinations, in a less detailed manner, of a larger number of examples—an investigation of the materials which supplied the elements of earlier inductions will show that only in the case of the ancient "Toltecan" tribes did Dr Morton examine nearly so many examples; while, in relation to what he designated the "Barbarous Race," to which the northern tribes belong, even in Dr Meigs' greatly enlarged catalogue of the Morton collection, as augmented since Dr Morton's death, the Seminole crania present the greatest number belonging to one tribe, and these only amount to sixteen.

In contrast to the form of head of the true American race, Dr Morton appends to his *Crania Americana* drawings and measurements of four Esquimaux skulls, familiar to me, if I mistake not, in the collection of the Edinburgh Phrenological Society. In commenting on the views and measurements of these, he remarks:—"The great and uniform differences between these heads and those of the American Indians will be obvious to every one accustomed to make comparisons of this kind, and serve as corroborative evidence of the opinion that the Esquimaux are the only people possessing Asiatic characteristics on the American continent." In some respects this is undoubtedly true; the prognathous form of the superior maxilla, and the very small development of the nasal bones, especially contrast with well-known characteristics of the American aborigines. But having had some little familiarity in making comparisons of this kind, it appears to me, notwithstanding these distinctive points, that an impartial observer

might be quite as likely to assign even some of the examples of Iroquois and other northern tribes figured in the *Crania Americana*, to an Esquimaux, as to a Peruvian, Mexican, or Mound-builder type. Compare, for example, the vertical and occipital diagrams, furnished by Dr Morton, of the Esquimaux crania (p. 248) with those of the Iroquois and Hurons (pp. 192-194). Both are elongated, pyramidal, and with a tendency towards a conoid rather than a flattened or vertical occipital form; and when placed alongside of the most markedly typical Mexican or Peruvian heads, the one differs little less widely from these than the other. The elements of contrast between the Hurons and Esquimaux are mainly traceable in the bones of the face; physiognomical, but not cerebral.

Taking once more their cranial measurements as a means of comparison; these, when placed alongside each other, equally bear out the conclusions already affirmed. For comparison, I select, in addition to the Scioto Valley Mound-builder, the following, as those pointed out by Dr Morton's own descriptions as among the most characteristic he has figured:—Plate XI., Peruvian, from the Temple of the Sun. "A strikingly characteristic Peruvian Head." Plate XI., C. "Here, again, the parietal and longitudinal diameters are nearly equal. The posterior and lateral swell of this cranium is very remarkable, and the vertex has the characteristic prominence." Of the Mexican skulls, Dr Morton remarks of Plate XVII.—"With a better forehead than is usual, this skull presents all the prominent characteristics of the American race,—the prominent face, elevated vertex, vertical occiput, and the great swell from the temporal bones upward;" and Plate XVIII.—"A remarkably well-characterized Toltec head, from an ancient tomb near the city of Mexico." Here it is scarcely possible to avoid the conclusion, that if a clear line of separation must be drawn, it cannot be introduced to cut off the Esquimaux from the others, but must class with them the Iroquois group, though pure Indians, as more nearly allied to them than to the Toltecs or the Mound-builders.

Table IV.—*Comparative Cranial Measurements.*

| | Longitud. Diameter. | Parietal Diameter. | Frontal Diameter. | Vertical Diameter. | Intermas- toid Arch. | Intermas- toid Line. | Occipito- frontal Arch. | Horizon. Circumf. |
|--------------------|------------------------|-----------------------|----------------------|-----------------------|-------------------------|-------------------------|-------------------------------|----------------------|
| Scioto Mound | 6.5 | 6. | 4.5 | 6.2 | 16. | 4.5 | 13.8 | 19.8 |
| Peruvian | 6.1 | 6. | 4.7 | 5.5 | 16. | 4.5 | 14.1 | 19.5 |
| " | 6. | 5.9 | 4.4 | 5. | 15.5 | 4. | 13.2 | 19. |
| Mexican | 6.8 | 5.5 | 4.6 | 6. | 15.6 | 4.4 | 14.6 | 19.9 |
| Toltecan | 6.4 | 5.7 | 4.5 | 5.4 | 14.6 | 4.5 | 13.5 | 20.2 |
| Iroquois..... | 7.5 | 5.5 | 4.5 | 5.7 | 15.2 | 4.5 | 15.1 | 20.8 |
| Cayuga | 7.3 | 5.1 | 4.2 | 5.4 | 14.2 | 4.5 | 15.5 | 20.8 |
| Oneida | 7.5 | 5.6 | 4.1 | 5.8 | 14.4 | 4.3 | 14.9 | 20.8 |
| Huron | 7.2 | 5.3 | 4.3 | 5.5 | 15 | 4.4 | 14.2 | 19.8 |
| Esquimaux | 7.5 | 5.4 | 4.6 | 5.4 | 14.3 | 4.1 | 15.2 | 20.4 |
| " | 7.3 | 5.5 | 4.4 | 5.3 | 14.1 | 4.3 | 14.4 | 20.3 |
| " | 7.5 | 5.1 | 4.3 | 5.5 | 14.8 | 3.9 | 15.5 | 20.3 |
| " | 6.7 | 5. | 4.4 | 5. | 13.6 | 4. | 13.9 | 18.9 |

These examples I refer to in preference to those presented in the previous table as the result of my own observations, as they are necessarily unbiassed. They are the specimens of the very stock I refer to, selected or brought by chance under the observation of Dr Morton, and included as the characteristic or sole examples of its tribes or nations, in his great work. But the same conclusions are borne out by the examples obtained within the Canadian frontiers; and they seem to me to lead inevitably to this conclusion, that if crania, measuring, in some cases, two inches in excess in the longitudinal over the parietal and vertical diameters, and in others nearly approximating to such relative measurements,—without further reference here to variations in occipital conformation,—if such crania may be affirmed, without challenge, to be of the same type as others where the longitudinal, parietal, and vertical diameters vary only by small fractional differences, then the distinction between the *brachycephalic* and the *dolichocephalic* type of head is, for all purposes of science, at an end, and the labours of Blumenbach, Retzius, Nilsson, and all who have trod in their footsteps, have been wasted in pursuit of an idle fancy. If differences of cranial conformation of so strongly defined a character, as are thus shown to

exist between the various ancient and modern people of America, amount to no more than variations within the normal range of a common type, then all the important distinctions between the crania of ancient European barrows and those of living races amount to little; and the more delicate details, such as those, for example, which have been supposed to distinguish the Celtic from the Germanic cranium; the ancient Roman from the Etruscan or Greek; the Slave from the Magyar or Turk; or the Gothic Spaniard from the Basque or Morisco, must be utterly valueless. If external circumstances or the progress of civilization exercise any influence on physical form, a greater diversity of conformation is to be looked for in Europe than among the Indians of America, where, as in Africa, nearly the same habits and modes of life have characterized the whole "Barbarous Race" throughout the centuries during which Europe has had any knowledge of them. But, making full allowance for such external influences, it seems to me—after thus reviewing the evidence on which the assumed unity of the American race is founded—little less extravagant to affirm of Europe than of America, that the crania everywhere, and at all periods, have conformed or even approximated to one type.

As an hypothesis, based on evidence accumulated in the *Crania Americana*, the supposed homogeneity of the whole American aborigines was perhaps a justifiable one. But the evidence was totally insufficient for any such absolute and dogmatic induction as it has been made the basis of. With the exception of the ancient Peruvians, the comprehensive generalizations relative to the Southern American continent strangely contrast with the narrow basis of the premises. With a greater amount of evidence in reference to the Northern continent, the conclusions still go far beyond anything established by absolute proof; and the subsequent labours of Morton himself, and still more, of some of his successors, seem to have been conducted on the principle of applying practically, and in all possible bearings, an established and indisputable scientific truth, instead of testing, by further evidence, a novel and ingenious hypothesis.

Dr Latham, after commenting on the manifest distinctions

which separate the Esquimaux of the Atlantic from the tribes of the American aborigines lying to the south and west of them, as elements of contrast which have not failed to receive full justice, adds : " It is not so with the Eskimos of Russian America, and the parts that look upon the Pacific. These are so far from being separated by any broad and trenchant line of demarcation from the proper Indian, or the so-called Red race, that they pass gradually into it ; and that in respect to their habits, manner, and appearance, equally. So far is this the case, that he would be a bold man who should venture, in speaking of the southern tribes of Russian America, to say *here the Eskimo area ends, and here a different area begins.*"* The difference thus pointed out may be accounted for, to a considerable extent, by the diverse geographical conformation of the continent, on its eastern and western sides, which admit in the latter of such frequent and intimate intercourse as is not unlikely to lead to an intermixture of blood, and a blending of the races, however primarily distinct and diverse. The evidence presented here, however, refer to tribes having no such intercourse with the Esquimaux, and distinguished from them by many important characteristics in manners, social habits, and external physiognomy. Nevertheless, if these conclusions, deduced from the examination of Canadian crania, are borne out by the premises, and confirmed by further investigation, this much at least may be affirmed : that a marked difference distinguishes the northern tribes, now or formerly occupying the Canadian area, in their cranial conformation, from that which pertains to the aborigines of Central America and the southern valley of the Mississippi ; and in so far as the northern differ from the southern tribes, they approximate more or less, in the points of divergence, to the characteristics of the Esquimaux :—that intermediate ethnic link between the Old and the New World, acknowledged by nearly all recent Ethnologists to be physically Mongol and Asiatic, if philologically American.

* *Varieties of Man*, p. 291.

