

Mrs. me (W.A.)

THE

CLASSIFICATION OF MANKIND,

BY THE

HAIR AND WOOL OF THEIR HEADS,

WITH

AN ANSWER TO DR. PRICHARD'S ASSERTION,

THAT

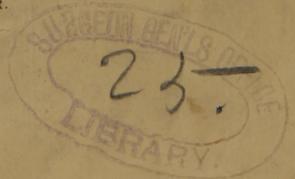
"THE COVERING OF THE HEAD OF THE NEGRO IS HAIR, PROPERLY SO
TERMED, AND NOT WOOL."

READ BEFORE THE AMERICAN ETHNOLOGICAL SOCIETY, NOVEMBER 3, 1849.

BY

P. A. BROWNE, LL. D.

.. Audire est operæ pretium."—HOR.



PHILADELPHIA:
PUBLISHED BY A. HART.
1850.

MEMORIAL OF THE

Pres. by R. Jewway

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NEW YORK, *November 19th*, 1849.

Extract from the Minutes of the American Ethnological Society.

At a meeting held on Saturday evening, November 3d, 1849, Professor Robinson in the chair, Peter A. Browne, Esq., of Philadelphia, in compliance with the invitation of the Society, read a paper on the Physiology of Hair, Wool and Fur, containing results of the microscopic examinations and the experiments which he has been prosecuting through the past year in Philadelphia.

The following resolution was adopted, on motion of Dr. Francis:

Resolved, That the thanks of this Society be presented to P. A. Browne, Esq., for his valuable paper, containing the results of his physiological investigations on Hair, to which the Society has listened with deep interest.

THEODORE DWIGHT,

Secretary pro tem.

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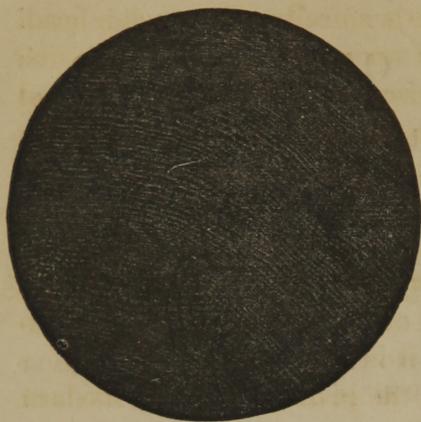
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"THE COVERING OF THE HEAD OF THE NEGRO IS HAIR, PROPERLY SO TERMED,
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IN examining the natural covering of the head of man, the first circumstance worthy of note, is the want of uniformity in form or shape of a filament. If a transverse section or disk of one of these is made sufficiently thin to lie upon the object holder of a microscope, and it is examined under that potent instrument, it will be found to be *cylindrical*—if the same is done with a second, it will be proved to be *oval*—while a third will be *eccentrically elliptical*. By extending these examinations, as we have done, to hundreds of these integuments, it becomes manifest that *these three* are the PREVAILING FORMS *or* SHAPES. There are, it is true, some variations from these three; but they are not more numerous than the usual deviations from other general rules. Now we respectfully submit that, in making this *individual variance* in shape, but *specific adherence* to three forms, the basis of a classification of pile, we have not deviated from the usual path pursued by our scientific predecessors. The botanist pays strict regard to the *shape* of the root, of the stalk, of the leaves and even of the flowers of plants; the mineralogist not only describes the *forms*, but even *measures the angles* of crystals; then why should the *shape* be disregarded in the grouping of hairs? In applying these rules, we soon found

that the hair of the head of the Choctaw and some other nations of American Indians, is *cylindrical*—that the hair of the white man is *oval*—and that the wool of the negro is *eccentrically elliptical* or *flat*. These are the three *species*.



No. 1.



No. 2.



No. 3.

No. 1 is a representation of the shape of a hair of the head of a full-blood Choctaw Indian of 60 years of age, specimen presented by Dr. Nott, of Mobile. The original is black, straight, lank, and has a diameter of $\frac{1}{277}$ of an inch.

No. 2 is a representation of the shape of a hair of the head of his Excellency, General George Washington; the original is colorless and flowing, and has for its greatest diameter $\frac{1}{312}$, and its least, $\frac{1}{500}$ of an inch.

No. 3 is a representation of the shape of a filament of wool of the head of a pure negro; the original is black, crisped and frizzled and spirally curled, and has for its greatest diameter $\frac{1}{312}$, and for its least, $\frac{1}{970}$ of an inch.

A further examination of these tegumentary appendages, and of these three forms of pile, satisfies us that they are equally distinguishable by *direction*; by which we mean the course, or path, which a hair pursues from the point where it pierces the epidermis to its apex. These, also, are divided into three kinds, viz. 1st. The straight and lank—2d. The flowing, or curled—3d. The crisped, or frizzled, which is, also, sometimes spirally twisted. We crave patience, while we endeavor to show that each of these qualities of pile is dependant upon its *particular form*, in connection with its essential properties, which are common to them all; and that, consequently, they must be found to prevail, respectively, in each of the above races. We propose to show that cylindrical hair must necessarily be straight and lank, and, consequently, if the

American Indian has cylindrical hair, it must hang straightly and lankly from his head; if the white man has oval hair, it must necessarily flow from, or curl upon his head, and if the negro has wool, which is eccentrically elliptical, for that very reason it is crisped, or frizzled, and sometimes curls spirally all over his head.

In order to make ourself understood upon these important points, it is necessary that we should premise that, among the essential properties of all pile are *ductility* and *elasticity*; these are so inseparably connected with this integument, as to become important tests of identity; enabling us, when we examine a filament in which they are absent, to determine that it is *not pile*. It soon became an object to us to ascertain in what part of a hair these properties reside; and by repeated experiments of the most rigid and satisfactory character, we discovered that it is in the *fibres*.

In all pile constructed according to the plan revealed by modern examinations under the microscope, there are antagonizing forces, viz. that of these ductile and elastic fibres to stretch and shrink, as acted upon mechanically or chemically, and that of the non-ductile and inelastic squamose cortex, to resist these forces. Now, when a hair is *cylindrical*, the stretching and shrinking tendency of the fibres is, on all sides of the filaments, *equal*; and this equality, aided by the restriction of the cortex, preserves the hair *straight*, and makes it *lank*. But when a hair departs from the cylindrical form, the stretching and shrinking powers of the filament become *unequal* in the same degree; for those of the fibres upon the two flattened sides, become more powerful than those of the fibres of the ellipsoids; there is, consequently, a tendency in this filament to curve in the direction of one of the flattened sides; this tendency the cortex is unable to resist; whereupon the hair either *flows*, or *curls*, according to the degree of depression. Every one knows how easy it is to bend the blade of a surgeon's spatula in the direction of either of its flattened surfaces, while his whole strength cannot make it bend in either of the contrary directions. Just so it is, except in an inferior degree, with a flattened hair; a small degree of elastic force will cause it to flow towards one of its flattened sides; and a little more will make it curl in the same direction; but no stretching or shrinking force ever makes it flow or

curl *edgeways*, or in the direction of its ellipse. We have examined numerous hairs under the microscope, with the elucidation of these very points in view, and have never witnessed a single deviation from this law; but, on the contrary, by attention to it, we have been able to trace the form and direction of hair from the cylindrical, (straight and lank,) through the oval, (flowing or curling,) to the eccentrically elliptical or flat, (the crisped or frizzled, and which is sometimes spirally curled.) It is true, that occasionally the shrinking process of the two flattened sides of a filament *alternates*, when an exception, in the shape of an *undulating* hair, is the consequence; but, generally, if the shrinking force of the fibres on one side gains the ascendancy over that of the other, a curl in that direction is permanent; for the more the former is curved, the more force will be required for its recursion, and the more the latter is stretched, the less will be its power to return to its original condition.

Now, if we were willing to admit that *mere forms* and *shapes* are sufficient ground whereon to build a classification of pile, by a much stronger reason may we be satisfied to do so when we find that, with these forms and shapes, are inseparably connected the *directions* of the integument.

We proceed, in the next place, to the *inclination* of pile, by which we mean the angle which the filament forms with the tegument from which it proceeds. This inclination does not depend upon the *shape*, nor upon the *direction*; nor does the direction depend at all upon *it*; but the inclination is due, entirely, to the angle which the root of the hair bears to the skin of the animal in which it is imbedded. The roots of cylindrical and oval pile have an oblique angle of inclination, for which reason those hairs do not grow out of the epidermis at a right angle thereto, but incline in a determinate manner; while the roots of wool, which is eccentrically elliptical, or flat, lie in the dermis *perpendicularly*, and hence the filaments pierce the epidermis *at right angles thereto*. This is an exceedingly important distinction, which explains some anomalies that have puzzled shrewd philosophers; for instance, Dr. Prichard, in his Natural History of Man, p. 21, gives a drawing and description of the head of a *Papua*, inhabiting the northern coast of

Guinea, who, he says, has a large bushy mass of half-woolly hair* standing out from his head, on account of which his breed has been called "*the mop-headed papuas.*" The Doctor says that they are a mixture of Malay and negro; but he appears at a loss to explain the phenomenon. It is the *hair* of the Malay, with the *inclination* of the negro's wool.

Here, again, let us pause for a moment, and reflect upon our progress. We find the head of the white man covered with a pile which, in shape, is *oval*—in direction, *flowing, or curled*—and which *pierces the epidermis at an acute angle*; while the wool of the negro is, in form, *eccentrically elliptical, or flat*—in direction, *crisped, or frizzled, and sometimes spirally twisted*, and in inclination *issues out of his epidermis at a right angle*. We confidently appeal to naturalists, whether these are not *prominent specific* differences. But, to proceed.

Pile is furnished with a coloring matter, which is variously disposed. The hair of the head of the white man, besides its cortex and intermediate fibres, has a *central canal*, in which this coloring matter, when the hair has any, flows; when this hair is *colorless*, the central canal is still found, but it is then *vacant*. But the wool of the negro has *no central canal*; the coloring matter, when present, is disseminated throughout the cortex, or is in the cortex and intermediate fibres. Is not this also a specific distinction? But this variation in the disposition of the coloring matter is, as regards classification of pile, a more important feature than at first strikes the mind; for, according to the rules of science, one organ is considered *more perfect* than another, if it employs a greater variety of apparatus in the performance of its functions. Now, *here* we find the hair of the head of the white man possessing an apparatus, viz. a canal for the conveyance of its coloring matter, which, in the wool of the negro, is *entirely wanting*; nature *there* making use of the cortex, or the cortex and fibres for *this*, in common with *other* purposes. The inference is irresistible. The hair of the white man is *more perfect* than that of the negro; and, as we know, by experience, that of all pile, that of the head of man is the

* Quære—What sort of hair is that which is "half-woolly?"

most completely organized, we will not, perhaps, be wandering astray, in ranking the hair of the head of the white man as a *perfect hair*.

Let us once more take a view of these distinctions as they have now been pointed out; only, this time, for the sake of greater perspicuity, confining ourselves to the integuments of the white man, and those of the negro. The hair of the white man is *perfect*, having not only all the apparatus found in other pile, but one belonging exclusively to itself, viz. a central canal for the conveyance of the coloring matter; it is, in shape, *oval*; in direction, *flowing*, or *curling*; in inclination, *acute angled* to the epidermis, out of which it issues.

The wool of the negro, on the contrary, is an *imperfect* pile, having no central canal for the conveyance of its coloring matter; it is, in shape, *eccentrically elliptical*, or *flat*, and issues out of the epidermis at a *right angle* thereto.

The next and last topic to which we mean at present to allude, for it is not our intention to exhaust the subject, but rather to introduce it to notice, is the *scales* upon the cortex of the pile.

These scales, since they have been discovered to be the main cause of the felting and fulling of wool, have become objects of intense interest; but our observations in regard to them must be of a very limited character. We will, then, barely remark, that they are common to both hair and wool; but that they differ so much upon these two kinds of pile, as almost, if not entirely, to justify the assertion that, in the *first*, they are in a *rudimentary* state only, in the *second*, in their *perfect* one. On hair they are few in number, comparatively; they are smooth of surface, the points are rounded, and they closely embrace the shaft. On the negro's wool they are numerous, rough, sharp-pointed, and they project from the shaft. The hair of the white man *will not felt*, but the wool of the negro *will felt*. On hair, the edges of these scales resemble mere transverse striæ; on wool, they are prominent and apparent.

But we are obliged to admit, that opposed to these opinions of ours, there are some high authorities, the principal one of which we will proceed to examine.

Doctor Prichard, (in Nat. His. of Man, p. 16,) cites Wagner for the following laws, viz.

1st. "That hybrid plants, in a natural state, are very seldom produced, and that the greatest number of the *reputed* instances rest on no sufficient evidence."

2d. "That hybrid plants are *very seldom fruitful among themselves*, but that such hybrids as the *Verbascum hybridum* and the *Digitalis purpurascens*, from the *D. purpurea* and the *lutea*, and all others which hold *an exactly intermediate place between the parent plants*, are ABSOLUTELY BARREN; while those which (owing to the proportion of pollen) *partake more of either kind*, and those which spring from the fertilization of such hybrids among themselves, are *occasionally propagated*."

3d. "That plants produced from *different VARIETIES* of the same SPECIES, are *altogether fertile*, and that no impediment exists to their propagation; while hybrids either revert to the original character, (generally that of the *maternal* parent,) or *become gradually less capable of reproduction*; and, within a few generations, become *entirely extinct*."

Doctor Prichard then remarks, that "A similar law prevails in the *animal creation*, and that its effects are, on a great scale, *equally constant and uniform*. Mules (he says) and other hybrid animals, are produced among tribes *in a state of domestication*; but that, except in some very rare instances, (occurring in particular tribes of birds,) they are *unknown in the wild and natural state*." And he adds, "that even when *individual hybrids* are produced, it is found *impossible to perpetuate, from them, a NEW BREED*. That it is only by returning towards one of the parent tribes, that the offspring of these animals is capable of being continued in successive generations," i. e. of forming a *permanent race*.

These laws of hybridism, so important in themselves, in a scientific point of view, become doubly so, from the circumstance that they form the chief ground upon which the Doctor founds his proposition, that ALL THE DIFFERENT RACES OF MEN BELONG TO BUT ONE SPECIES.

The Doctor admits (p. 18) that "in order to support this proposition, he is *bound to prove* that mankind, *of all races and varieties*,

are *equally* capable of propagating their offspring by intermarriages, and that such connections are *equally prolific*, whether contracted between individuals of the *same*, or of the *most dissimilar varieties*."

Having, very properly, taken upon himself the *onus probandi*, the Doctor commences his evidence with the table of M. Rugundus, (Voyage dans les Brazils en 1835,) which purports to give the relative number of "*whites*," "*men of color*," "*negroes*" and "*Indians*," in different parts of America, in different years, some as far back as 1778, and others as late as 1824. Upon this table, it is worthy of remark, that the most it can prove, if every word is taken for verity, is, that there exists, in the places therein named, *a large number* of *mulattoes*, and even to do this, it must be taken for granted that "*men of color*," means "*mulattoes*," and that the *blacks* are called "*negroes*." We do not know how this is in Brazil, but in this vicinity, if any one were to call a black person a "*negro*," it is ten to one that he would be offended; although black is said to be no color at all, the blackest person is here denominated "*a person of color*."

Morse, in speaking of Brazil, in 1821, estimates the population at 2,000,000, which, *he* says, is composed of whites, negroes, Indians, mulattoes and mestizoes.* *He* does not give us the particulars of this motley group; but Mitchell says that three-fifths of the population are *negro* slaves.

2d. In regard to the West Indies, upon which, it will be seen in p. 18, that the Doctor implicitly relies upon this table, as showing *a race of mulattoes*,† the number of men of color and negroes are not put down by M. Rugundus *separately*; but the whole, without date, are estimated at 1,600,000.

In Goodrich's Geography (1840) they are proportioned as follows: free blacks, 1,503,712; slaves, 367,865; total, 1,811,577. The mulattoes not being considered of sufficient consequence to be separately enumerated.

* Mestizo is the Spanish word for mongrel. It is applied to the offspring of a Creole or European and an Indian. It is derived from the Latin *mictus*, mixed; and that from the Greek *miktos* of the same signification.

† He remarks, that there the *men of color* are so much increasing, that it is probable that they would eventually become the masters, were it not for the numerical force of the negroes.

3d. In the United States of America, another stronghold of Doctor Prichard's, this table of M. Rugundus' computes that, in 1820, there were 7,793,008 whites, 1769 men of color! and NO NEGROES NOR BLACKS! (unless they are included in the 1769 *men of color!*)

In Goodrich's Geography, the inhabitants of the United States for this same year (1820) are thus estimated: whites, 7,872,711; slaves, 1,543,688; free colored, 238,197; total, 9,654,596. No distinction being made between the blacks and mulattoes.

We therefore respectfully submit that this table, conceived in ignorance, and brought forth in error, is, for the purpose that it has been used by Doctor Prichard, viz. to prove that the mulatto is a self-perpetuating race, entirely useless.

The next item in Doctor Prichard's evidence, consists of certain examples of *intermixed tribes* of men, wherein, (as he says,) *entirely new and intermediate stocks* have been *produced and multiplied*.

The first of these is the Griquas or Grequa Hottentots, descended from the Dutch Colonists and the aboriginal Hottentots. The Hottentots are described, in Morse's Gazetteer, as consisting of three races, viz. the inhabitants of the Colony, the Bosjesmans and the Namaquas. The first are described as a mild, quiet and timid people, but naturally the most lazy on earth; their indolence, (says this author,) is a real disease, they will rather fast and sleep the whole day, than seek food by any exertion! The Cape Colony was settled by the Dutch in 1650; the United Brethren established a mission among them in 1736, which was renewed in 1792, and in 1815 it was conquered by the British. *Griqua* town is a station of the London Missionaries, on the great Orange river, 700 miles north-east of Cape town. Mitchell describes the Griquas as quiet, inoffensive and ignorant, but filthy in their habits, and ugly in their persons; and, he says, that their language is compared to the clucking of a turkey.

The reader cannot fail to admire the Doctor's selection of this example. One has only to look at the drawing, and read the description of Doctor Prichard of one of these clucking unplumed bipeds, to be convinced that they are *hybrids* of the intermediate class, noticed by Wagner; the work of *man's* hands,

not of those of the Almighty; a race which he *allows* to blot and blemish nature for a *limited time only*, and then extinguishes; as if it were in vindication of the beauty and order of his creation of species.

The second example given by Doctor Prichard of an *entire new stock* being produced and multiplied, is the Brazilian Cafusos. We have already spoken of the population of Brazil, in general terms, in our remarks upon the table of M. Rugundus, and it remains only to say, that these Mestizoes are, to all appearance, *hybrids*, crosses of the native Indians with negroes brought from Africa. If they are not hybrids, but an *entirely new stock*, it was the business of Doctor Prichard to have shown that they are not continually produced by the same mixture of species to which they owe their origin, and that they neither return to the species of one of their parents, nor run out after a few generations, according to the law of hybridism, which he has quoted and admitted to be *universal*. *This* is the pivot of the case, and in *this* his evidence fails entirely.

The third and last example adduced by Doctor Prichard, is the Papuas of the northern coast of Guinea and the adjacent islands. The knowledge of these people is traced to Dampier, Forrest, and M. M. Quoy, and Guimard, and M. Lesson, the latter of whom *pronounces them to be* HYBRIDS. Speaking of those authors who preceded him, he says, that they are the first, "qui ont démontré que les habitans du littoral constituoient UNE ESPECE HYBRIDE," &c. &c., and he adds, what confirms this opinion, viz. that "the greater part de ces *papeuas hybrides* présente des hommes d'une constitution grêle et peu vigoureuse," which, we respectfully submit, accords with the character and description of *hybrids*.

With the whole world before him, these are the only instances which this indefatigable author has been able to glean, and these are far from proving his position. Doctor Prichard, nevertheless, triumphantly concludes, that "it is *unquestionable* that intermediate races of men exist and are propagated, and that *no impediment whatever exists as to the perpetuation of mankind when the most dissimilar variations are blended together.*" But this conclusion is unwarrantable by the proofs he has adduced, even admitting that he has shown the existence of mongrel

racés ; for, in two out of three cases, he has altogether neglected and failed to show that "*no impediment exists to their perpetuation,*" and yet *that* was the part of the proposition upon which the question turns ; and in the third case he has, by proving that they are hybrids, shown that *an impediment does exist to their perpetuation.* It is a singular way to prove a matter in dispute to produce two witnesses, who are entirely ignorant of it, and a third, who testifies the very reverse of the proposition !

Doctor Prichard next proceeds, with admirable industry, to the collection of evidence to show that, with many of the *lower* animals, *domestication* and change of climate and habits have caused *varieties* and *diversities* ; from which he infers that all the differences apparent in the races of *men* may have been occasioned by the same influences.

Protesting that the inference he draws is a *non sequitur* from the premises, were they proved or admitted, we will submit the following brief, but satisfactory answer to his proposition, viz. : that it matters not what *may* have been the cases with the lower animals, that *in regard to man, such has not been the fact* ; for, if history is at all to be depended upon, the negro has been the same black-skinned, woolly-headed animal for the last 2000 years. Herodotus, in the year 413, B. C., describes his black complexion and woolly hair ; and we know from experience, that a white man may live in a tropical climate, and even turn savage, without affecting the color of his skin, or the shape, direction, or inclination of his hair, while pure negroes may be propagated from generation to generation in temperate climates, but always with the same rete mucosum and flat frizzled wool issuing at right angles from the epidermis of his scalp. To these unyielding facts, all reasoning from analogy must succumb, and all biasses of religion and humanity must give way. In page 7, Doctor Prichard tells us that "he does not regard this question as one of which the decision is a matter of indifference, either in *religion* or *humanity.*" This is *ad captandum vulgus*, and not the language of a philosopher in search of truth. His mind should be unprejudiced,—he ought to have no hypothesis nor theory to support, no polar star but truth. We shall now proceed to the second branch of the inquiry.

Doctor Prichard has devoted the greater part of one section of his book, to what he appears to esteem full proof, that the tegumentary appendages of the negro's scalp is *not wool, but hair*. He commences thus: "It is commonly said, that the substance which grows on the head of the African races, and some other dark colored tribes, chiefly inhabiting tropical climates, is wool and not hair."

And he concludes with these words:—

"From these observations, I am convinced that the negro has *hair, properly so termed, and not wool.*"

Now, as we agree with Dr. Prichard, that a prerequisite to the determination of this point is to form a clear idea of *the difference between hair and wool*, we will first, with him, turn our attention in that direction.

Here again the Doctor properly admits, that he is bound to wield the laboring oar, having undertaken to show what is in opposition to the common sense and commonly expressed opinion of mankind. But to his *proofs*. He commences with citations from Doctor Eble. We have not this last named gentleman's book before us; but, according to Doctor Prichard's own showing, his principal labors were bestowed upon a comparison of the merino wool, with the fleece of the Chinese sheep. *Wool* compared with *wool*, and not *wool* with *hair*! He found a striking difference between *these two wools*; a circumstance not at all surprising in a contrast of the fine Spanish wool with the coarse Chinese fleece.*

Doctor Eble is represented as saying, that "*all wool* displays filaments twisted and matted in all directions." This *twisting* and *matting*, (as he calls them,) which, when applied to the manufacture of hats, is called *felting*, and when to cloth, *fulling*, is caused by the scales upon the filaments; and, as we are here given to understand by Doctor Eble, is a *characteristic* of that integument; and therefore it was reasonably to be expected from Doctor Prichard, if he proffered to prove by Doctor Eble, that the covering of the negro's head was *not wool*, to show that it was destitute of this characteristic. But, to our surprise, he does nothing of the kind.

* Mr. Youatt, in p. 129, of his *Essay upon Sheep*, says that in this immense empire, [China] they have, as might naturally be expected, different breeds of sheep, differing much from each other; but the wool of the only one he has particularly described, is *short* and *coarse*.

Doctor Eble is further quoted as saying, that “the shaft of the filament of the *wool* does not preserve an uniform calibre, but is thickened here and there, and often swelled with appearances of knots.” Here, again, we anticipated that Doctor Prichard would take upon himself to show that the covering of the negro’s head differed from wool in these essential particulars; but he has not even made the attempt.

Doctor Eble is still further represented by Doctor Prichard, as saying, that “he could every where distinguish the *medula* or *pith*, and could accurately discriminate between this and the cortical substance.” In *this* assertion, Doctor Eble, (if he is correctly quoted,) was in error, for *wool* has *no central canal*. But this error escaped entirely the notice of Doctor Prichard, which does not prove a deep knowledge of the subject.

Hitherto, the observations of Doctor Eble, (so far as we have them at second hand,) are *confined* to *wool*, but he is, in the next place, represented as speaking of *wool* and *hair*. “The *hair* of the Thibeau goat, (he is made to say,) approaches, in its texture, very nearly to the *Merino wool*, only it is smaller in the diameter of its shaft, and the transverse laminæ [the edges of the scales] are not so regularly placed.” We have no specimens of the tegumentary appendage of the goat of Thibet, but notice that Milne Edwards calls it *wool*, (*laine*).—See *Elem. de Zool.*, 447. There is, therefore, no cause for surprise, that it should resemble *Merino wool*. But suppose, for the sake of the argument, we were to admit it to be *hair*, was it not the duty of Doctor Prichard, to have compared this pile of the goat with that of the negro, and to have informed us of the result?

Again, after having quoted all that he deemed necessary from this learned German, was it not the business of Doctor Prichard to have shown, therefrom, *what is hair, and what is wool, and to have pointed wherein the covering of the negro’s head is similar to the one and different from the other?* And, since he has done neither the one nor the other of these, are we not compelled to admit, that his citations from Doctor Eble, are of no avail; leaving the question as uncertain as it was before they were made?

Doctor Prichard next refers to the writings of M. Monge and Mr.

Youatt. The former of these was the first person who suggested that the scales upon pile were subservient to the felting process, and the latter was the first who saw and described the scales.

But there is not one sentence in the essays of either of these gentlemen, which countenances the idea that "the covering of the head of the negro is hair, properly so termed, and not wool." If there is, let it be produced.

But the Doctor, like the farmer in the fable, having entirely failed in obtaining aid from others, falls back upon his own resources. In p. 105, he tells us that, "with the aid of Mr. Estling, and a microscope of about 400, he examined the filaments of hair belonging to the following different races of men, viz.: *Negro*,* *Mulatto*, *European* and *Abyssinian*, and compared these with the filaments of wool of the Southdown sheep. That the filaments of the wool had a very rough and irregular surface, though no serrations, distinctly so termed, were perceptible. That the hair of the negro, which was extremely unlike that of wool, and of all the other varieties mentioned, had the appearance of a cylinder, with a smooth surface. That they all appeared, more or less, filled with a dark coloring matter; which, however, did not entirely destroy their transparency. That the coloring matter was apparently much more abundant in the hair of the negro, than in the others. That the Abyssinian hair was also very dark, but so far diaphanous, that a ribbon-like band appeared running down through the middle of the cylindriform tube; and that the mulatto hair resembled the Abyssinian in this respect. That the filament of European hair seemed almost entirely transparent; it had the appearance of an empty tube, coated internally with something of a dingy or dusky color; which only prevented it from being quite pellucid. That the European hair of a light color, had the same appearance, but was still less darkened."

Let us examine these descriptions and comparisons in detail. The high character of the author, and the important conclusion to which he comes from them, will justify this proceeding.

* Ought not the Doctor to have stated whether the specimen he examined was *pure negro*, or at least, to have informed us *where* it was obtained; for it is notorious, that there are mongrels of black and white crosses whose position cannot be determined by the color of the skin.

He says, that "the wool of the Southdown sheep had a very rough and irregular surface, though *no serrations*, distinctly so termed, were perceptible." *Serrations* is the name given by Mr. Youatt to the edges and points of the scales of pile, and they were not only *seen* by Mr. Youatt upon the wool of the Southdown sheep, but were *counted*, and in his Essay upon Sheep, which was published in 1835, they are *depicted* and *described*. We have in our collection of specimens of wool some of the pure Southdown, upon which these scales and their edges are as plainly to be seen under the microscope, as any other object of their minuteness.

"The hair of the negro, which was *extremely unlike* that of wool," &c.

This is not the language of a naturalist, examining an object with the microscope. He either explains the particulars in which an "*extreme unlikeness*" exists, or he furnishes drawings and descriptions of both objects, and leaves the reader to judge of the discrepancy for himself.

"The hair of the negro had *the appearance of a cylinder*."

If it is cylindrical, (which, by the way, is exceedingly easy to determine under the microscope,) why not say so, and no more? We have examined numerous specimens of the covering of the negro's head, and have *never found one that was cylindrical*. Where the negro blood is pure, they are *always eccentrically elliptical* or *flat*.

But the hair of the negro was not only extremely unlike that of wool, but was, also, *extremely unlike* that of the *other varieties* of pile examined by Doctor Prichard, viz. those of the *mulatto*, the *European* and the *Abyssinian*. It is, then, a *non descript*, and we are at a loss to conceive how this learned gentleman, who decides that it is NOT WOOL, because it is *extremely unlike* the wool of the Southdown sheep, can infer that it IS HAIR, because it is *extremely unlike* all the hair with which it is compared!

"The surface was *smooth*."

This is a most unfortunate discovery, for it proves that it is *neither hair nor wool*; for both these integuments have a squamose cortex, which *prevents the surface from being smooth*; the scales of wool, nevertheless, being more numerous, more pointed and setting looser on the shaft than those of hair. If Doctor Prichard could

not discover these scales upon the filament of a Southdown sheep, it must have been owing to some defect or a want of power in the microscope he used, or to his own want of skill in its management; and in either of these cases it is not surprising that he imagined that his favorite pile was smooth.

“The hairs all appeared to be more or less *filled* with a dark coloring matter; but the coloring matter was apparently *much more abundant* in the hair of the negro.”

If they were *all filled*, how could the negro's be *much more abundant*? Was his *more than filled*?

“The Abyssinian hair was also very dark, but so far diaphonous [transparent?] that what was in its centre could be perceived.”

This is very extraordinary kind of “*very dark transparency*,” to say the least of it, and this part of the sentence might have been more happily expressed. But what was this darkness visible? “A ribbon-like band in a *cylindriform* tube.” Now, if Doctor Prichard, (even with the aid of Mr. Estlin,) could, with a microscope of 400, see the central tube of an Abyssinian hair so plainly as to determine that it was cylindriform, and yet could not see the scales of the cortex of a Southdown sheep, it deserves to be set down as one of the wonders of this miraculous age!*

Unfortunately we have in our cabinet no specimens of Abyssinian hair; but Doctor Prichard informs us that the mulatto's hair resembles that of the Abyssinian in this respect; and we have mulatto hair and mulatto wool in abundance; for the tegumentary appendages of this hybrid resemble sometimes the pile of one parent, and at other times that of the other, as laid down in the laws of hybridism, cited at the commencement of this review, and confirmed by Doctor Prichard.

“The European hair,” [of what nation?] “seemed” [this word sometimes means to have the *appearance* without the reality!] “*almost entirely transparent*.” We respectfully submit that these expressions are *almost entirely* too vague to be admitted into a physiological description; especially when the object of that description is to convince that WOOL is HAIR, *because it grows on a negro's head!*

* In a segment or disk of a hair which was 0.059 lines, Henle found this centre to be only 0.017.

“It had the *appearance* of an *empty tube*.” Yet it was *not empty*, for he says that “it had an *internal coating* of *something*.” [What that *something* is, we take for granted was *indeterminate*; for the Doctor has left it *undetermined*.] But it was “of a *dingy dusky* color,” [to which of the seven colors does this belong?] “which only prevented it” [what would it do more than prevent it?] “from being quite pellucid.” What an astonishing discovery, that a dark color should prevent an object from being pellucid!

So much for Doctor Prichard’s examination and *description* of the covering of the head of the negro, from which *he* was *convinced* that it is “*hair, properly so termed, and not wool*.”

To do the Doctor justice, he does not appear to be entirely satisfied with his own conclusions upon this subject; for he winds up, by informing his readers that “if the negro’s hair *were wool*, it would by no means prove the negro to be a peculiar and separate *stock*; since we know that some *tribes* of animals bear wool, while others of the same *species* are covered with hair.”

We would be much pleased to know the exact meaning here attached to the words “*stock*,” “*tribes*,” and “*species*.” If they are used synonymously, and he means to say that the modification of being covered with hair, or covered with wool, *when permanently native in the race*, is not a sufficient ground for a *specific* division of a genus, we respectfully deny the assertion, and call upon this learned author to sustain himself by references to natural history. In page 249, Doctor Prichard gives a definition of species, which is not unexceptionable, but by which we are willing, on this occasion, to abide. He says, “Species are simply tribes of animals which are certainly known, or may be inferred on satisfactory grounds, to have descended from the same stocks, or from parentages *precisely similar*, and in *no way distinguished from each other*.” But the parentages cannot be said to be *precisely similar*, and *no way distinguished*, if those of one race have been *certainly known always to have hair*, and the other *wool*.

To conclude, we opine that hair and wool are not the same integument; for

1st. Hair is, in shape, either cylindrical or oval; but wool is eccentrically elliptical or flat; and the covering of the negro’s head is eccentrically elliptical or flat.

2d. The direction of hair is either straight, flowing or curled ; but wool is crisped or frizzled, and sometimes spirally twisted ; and the covering of the negro's head is crisped or frizzled, and sometimes spirally twisted.

3d. Hair issues out of the epidermis at an acute angle, but wool emerges at a right angle ; and the covering of the negro's head issues out of the epidermis at a right angle.

4th. The coloring matter of a perfect hair, for example that of the head of the white man, is contained in a central canal ; but that of wool is disseminated in the cortex, or in the cortex and intermediate fibres ; and the covering of the head of the negro has *no central canal*.

5th. The scales of the cortex of hair are less numerous than those of wool, are smooth, and less pointed, and they embrace the shaft more intimately ; and the scales on the filaments of the covering of the negro's head are numerous, rough, pointed, and do not embrace the shaft intimately.

COROLLORY.—Hair will not felt, but wool will ; and the covering of the negro's head will felt—has been felted.

For these and other reasons we are “convinced” that the negro has on his head “*wool*, properly so termed,” and not *hair*. And since the white man has hair upon his head, and the negro has wool, we have no hesitancy in pronouncing that they *belong to two distinct species*.

M. Flourens, an eminent French physiologist, found four distinct layers between the cuticle and the cutis ; the second of which, he says, is a mucous membrane—a *distinct organized body*, underlying the pigment, and existing in persons of *dark color only*. M. Flourens sought, in vain, for this membrane between the cutis and outer lamina of the epidermis of a white man ; and yet *this* is the seat of the discoloration produced in *his* complexion by exposure to the sun. From these examinations, this distinguished naturalist and anatomist was able to pronounce, definitely, that the discoloration in the skin of the white man is *totally different in kind* from the cause of *blackness in the negro*, he therefore justly concludes that the *negro and the European are separate species of beings*.

We are prepared to show, by proofs incontestible, that there are *different SPECIES* of sheep that are now amalgamated ; but from which no PERMANENT stock can ever be produced.

