TRICHOGRAPHIA MAMMALIUM;

OR

DESCRIPTIONS AND DRAWINGS

OF THE

HAIRS OF THE MAMMALIA,

MADE WITH THE AID OF THE MICROSCOPE.

BY

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AND

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"Le Microscope, ce puissant moyen d'investigation, sans le secours duquel on ne peut plus parler d'un corps quelconque, sans éprouver une juste timidité." MANDL.

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THE

TEGUMENTARY APPENDAGES OF THE MAMMALIA.

Hairs have generally been considered as the characteristic covering of the Mammalia, as feathers are of Birds, and scales are of Fishes and Reptiles; so much so, that a zoologist of some note once proposed to call this class "the Pilifères," as contradistinguished from "the Pennifères," and "the Squamifères." But there are animals who suckle their young, the greater part of whose covering is *not hairy;* wherefore, we propose a new classification and nomenclature of the Mammalia, according to the reality of their tegumentary appendages.

GENERAL TABLE OF THE TEGUMENTARY APPENDAGES OF THE MAMMALIA.

1st. *A hard mantle;* composed of carbonate and phosphate of lime deposited in cells of animal matter.

2d. *Compact corneous* and *imbricated* matter; the appendages forming, together, a *scale-like covering.*

3d. *Fibrous corneous protuberances;* the appendages forming those *horns which are unconnected with the osseous structure* or *skeleton.*

4th. *Fibrous* and *parenchymatous* matter; the appendages are *spines.*

5th. *Membranous* and *scale-like* matter; these appendages are found upon *prehensile tails.*

6th. Fibrous corneous matter covered with membrane; these appendages are *Hairs*, which are either

A. Agglutinated fibres, viz. bristles, or
B. Non-agglutinated fibres, viz.
   a. Hair proper.
   b. Fur.
   c. Wool.

FAMILIAR EXAMPLES OF THE FOREGOING CLASSES.

Hard mantle,—the *Armadillo*. Scale-like covering,—the *Pangolin*. Horn,—that of the *Rhinoceros*. Spines,—the *Porcupine*. Scaly tail,—the *Possum*. Hair,—the *Horse*. Fur,—the *Beaver*. Wool,—the *Sheep*.

But it must by no means be inferred that each kind is confined to *one* of these appendages; on the contrary, it sometimes happens that an animal has two, in such equal degrees of profuseness, that it is difficult to tell which prevails.

Corneous matter we distinguish from *bony* by the absence of *bone-earth** and from *feathery* matter, to which it is closely allied, but which contains one atom less of oxygen. This (corneous) matter is generally divided into three kinds, viz., compact, fibrous, and membranous; to which, (as will be perceived,) we have added a fourth, viz., Cellular. The covering of the Pangolin is generally called scales; but we purposely exclude that word, as it is the name of the characteristic covering of Reptiles and Fishes.

We commence with the *Hard Mantle*.

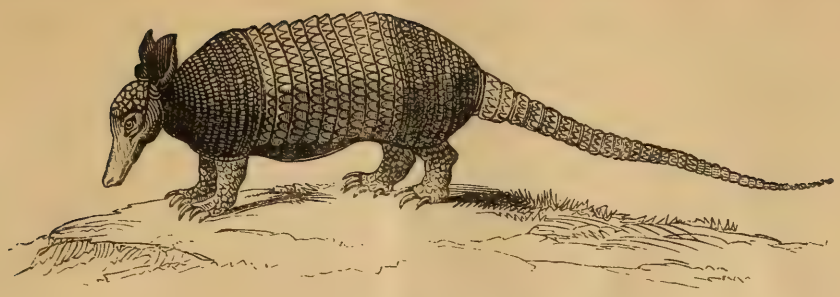
To this category belongs the ARMADILLO, the *Dasypus* of Linnæus, which has its entire superior surface covered with this mantle. See fig. 1.

Tatou is the *Brazilian* name. The Spaniards gave it the name of Armadillo, on account of the armor, and the Portuguese call it Encouberto, for the same reason.† "Dasypus," (from "dasus,"

* Phosphate of Lime.

† "Encouberto," covered, concealed, enveloped, protected.

Fig. 1.



hairy, and "pous," foot, which was one of the names of the hare among the Greeks,) is much less appropriately applied to this animal.

For convenience of description, the armor of the Armadillo is generally divided into four principal portions,—a helmet, or covering for the head;—a buckler, to defend the shoulders and anterior part of the back:—central bands, varying in number from three to thirteen; and a part sometimes called the crupper, which hides the posterior part of the back. The tail varies in length, shape, and covering; being sometimes short and tubercular, at others long, and either skinny, tubercular, or in crustaceous rings. The legs are covered with tubercles, and the feet are provided with strong claws. Besides whiskers and eyebrows, they have hair upon the abdomen, (the skin of which is soft and thin,) and hair or hair-like processes upon the back. The brain has the odor of musk.

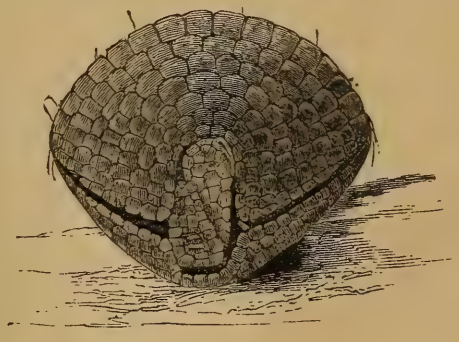
It is not our province to point out the object that nature had in view in placing upon the head and body of the Armadillo this formidable armor; and if it were, we would be discouraged by the entire failures of those who have endeavored to do so. One writer sagely descants upon the providential protection it affords from the otherwise destroying effects of swarms of ants, that are found in the parts of South America which the Armadillo inhabits, seeming to forget that these insects would be most likely to attack the abdomen, which is without this protection. Another author, with about as much reason, tells us that the armor was designed to shield the animal from the scorching effects of a tropical sun; as if a being which lived in subterranean excavations required such a parasol.

Armadillos have been divided into species according to the number of *bands;* but Griffith justly considers this arrangement objectionable, since Azara has shown that the bands vary among individuals of the same species.* The teeth are good grounds for distinction; and although placed in the Order "Edentata," F. Cuvier assures us that the Encouberto has incisive teeth, and we know that others have molars.

Mr. Owen, in his Odontography, p. 320, says that most naturalists regret that the great reformer of Zoology should have substituted the name *Edentata* for that of *Bruta*, applied by Linnæus to the order of mammals which he had characterized by the absence of incisives; only two species of which are *without* teeth, while *almost all* are destitute of *incisors*. And in a subsequent page, speaking of the Chlamydotherium, he says, there are eight teeth on each side of the upper, and nine on each side of the lower jaw—the three anterior ones of the latter being *incisors* BY POSITION. They vary also in the number, size, and shape of their claws.

The three-banded Armadillo possesses the power of rolling itself into a ball, the head and tail then being adjusted, side by side, at a small appropriate aperture, to enable the animal to breathe. See fig. 2.

Fig. 2.



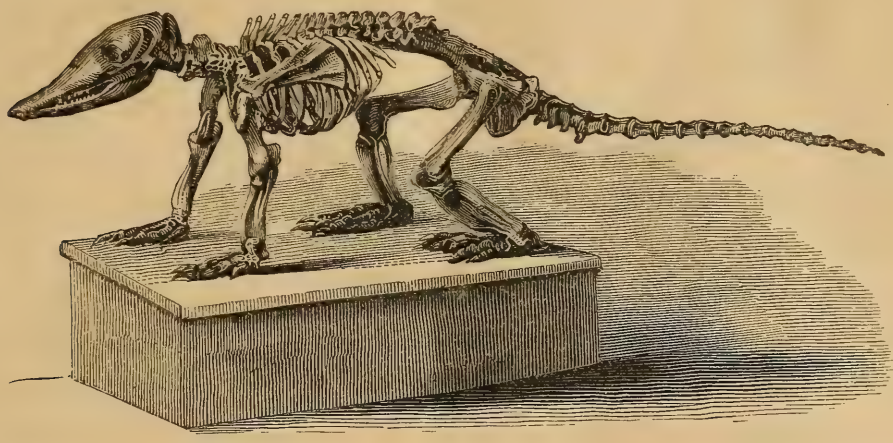
Whether any other species of Armadillo possesses this power, we do not undertake to determine. Nature seems to have provided no means of enclosing the long ringed tails *within* the armor, and their hardness seems sufficient to protect them from outward injury. It is true that the pangolin with a long tail rolls itself up also, but his tail is more flexible, and being flat on the under side, fits exactly to the back of the animal when it is in this coiled position.

The following figure (No. 3) is copied from a daguerreotype of

* Buffon considered it a *sexual* difference.

a skeleton belonging to Prof. Paul Beck Goddard, (who politely loaned it to us,) marked, "7-banded Armadillo."

Fig. 3.



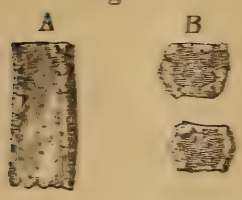
DIMENSIONS OF THE SKELETON.

Length from tip of muzzle to tip of tail, 16 inches; length of head, 3; of neck, 1; of body, 5 4-10; of tail, 6 6-10; height, 3 5-10; circumference, 6. Spine, cervical vertebræ, 7; dorsal and lumbar, 16; os sacrum and coccyx, 9; tail, 20, of which 13 are rings, and 7 vertebral. Scapula, length, 1 5-10 inches; breadth, 1. Sternum, length, 1 5-10; os humeri, 1 6-10; ulna, 1 6-10; radius, 1 1-10; ossa innominata, 2 2-10; os femoris, 1 7-10; Tibia, 1 2-10; Fibula, 1 3-10; os calcis, 7-10. Claws, in front, 4—length, 1 3-10, 1 2-10, 5-10, and 4-10; in rear, 5—length, 1 3-10, 1 2-10, 1, 7-10, and 5-10. Teeth, 7 in each jaw, above and below (molars.)

The covering of the Armadillo must not be confounded with the envelope of the Chelonians; the latter being a corneous enlargement of the *osseous* structure, intimately united with the rest of the skeleton;* while the former is entirely tegumentary, and composed of *carbonate* and phosphate of lime deposited in cells of animal matter. We placed some pieces of the armor in diluted muriatic acid, by which it was made as flexible as a piece of leather, although it was before dry and horny. The lime was dissolved with effervescence. Upon adding to this solution oxalic acid, we had a fine white precipitate. Upon subjecting this precipitate to a microscope of high power, it was found to consist of groups of crystals of octahedrons, truncated on the corners.

* Fleming, Phil. of Zool., 269.

Fig. 4.



We next (after having ascertained its weight) submitted a portion of the buckler to the action of the blowpipe; and having consumed the animal matter, we found that it had lost half its weight; but that it retained its figure, all the lines and angles having preserved their original sharpness. See fig. 4, A. and B. Having boiled it in water, and found that it contained nothing soluble in that liquid, we next submitted it to diluted nitric acid, which quickly dissolved it entirely. To one portion of the solution we added nitrate of silver, and detected phosphorus. To another portion we added sulphate of soda, but found no magnesia. To a third we added oxalic acid, which threw down a white precipitate crystallized, as before mentioned.

From the above experiments we conclude that the armor of the Armadillo is composed of carbonate and phosphate of lime and animal matter in equal quantities, by weight. Its *bones* (according to Simon) have 53 per cent. of *phosphate* of lime to only 6 of carbonate.*

This covering of a mammalia bears a strong analogy to the shells of some molluscous animals. And, as regards appearance, we were forcibly struck with the microscopic representation of the shell Pinna in Carpenter's Elements, figure 46, in p. 183, which might be mistaken for the buckler of an Armadillo.

It is obvious, then, that it is a mistake to suppose (as some have done) that this armor is *formed of hairs soldered together*.† So far as the horny part of the covering is concerned, we are willing to admit that *they have the same origin;* and certain it is, that horn and hair have the *same elements*, viz. Carbon 48. Hydrogen 39. Nitrogen 7, and Oxygen 17; but that the armor is *composed* of hairy fibres, agglutinated together, is not confirmed by any examination we have made.

We must now direct our attention to the plates.

Almost every physiological book we open informs us that organic

* See Animal Chemistry, p. 598.

† "Qui paraissent formés de poil soudés entre eux." Elem. de Zool.

matter has always a *rounded form;* but the plates of the armor of the Armadillo are not generally bounded by convex surfaces, nor do they commonly present rounded outlines; on the contrary, they are, for the most part, circumscribed within *straight lines* and *angles;* forming parallelograms, hexagons, triangles, polygons, and other mathematical figures. The plates of the Armadillo form angles, *ab initio*, and become rounded by pressure.

The Armadillo we are now about to describe is bicolored and ring-tailed, the Novemcinctus; but the particular description of which will serve as a general one of the genus. It is probably a young animal, for two of its molar teeth are not entirely cut. All of them are hollow and devoid of root, indicating their continual growth. They are very hard, and have no enamel. See fig. 5.

Fig. 5.

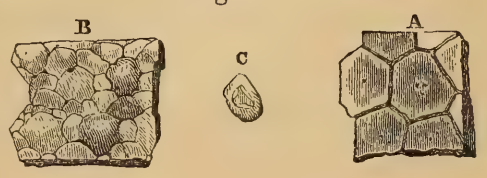
The whole interior of the armor is lined with a membrane, which, in the dried state of our specimen, is of a brown color, of the thickness of $\frac{1}{180}$ of an inch, and of the specific gravity of 1.824. This probably represents the first layer of fascia, or cellular tissue, generally found beneath the skin. See fig. 6.

Fig. 6.

This membrane appears to be entire, but is moulded to the projections and depressions of the interior surface of the substance next described, to which it closely adheres. Near the bands at A. it either thickens into, or is closely connected, with a layer of muscular fibre of great elasticity and toughness. Attached to the interior of this membrane are some small dried filaments supposed to be nervous.

Immediately above this membrane is found the body of the armor, or *dermis*, if so it may be called. It is $\frac{1}{10}$ of an inch thick, has a s. g. of 1.80, is negatively electric, and, in the dry state of our specimen, hard enough to scratch sulphate of lime. Upon examining it on the interior face, (fig. 7, A.) it is found to be laid out in regular

Fig. 7.



or depressed mathematical figures; differing in form and size according to the species, and the part of the armor upon which it is found.

The buckler of the one at present under discussion (fig. 7) shows depressed, unequal sided hexagons, differing in their greatest diameters from $\frac{3}{10}$ to $\frac{2}{10}$ of an inch. Each hexagon is bounded by four longer and two shorter lines; the angles are various. They are of the consistence of horn, and inelastic; but are partly separated by a white cartilaginous or fibro-cartilaginous substance, of the average width of $\frac{1}{90}$ of an inch, and they are covered entirely with a hard, thin, pearl-white couche,* embossed with figures, viz., one in the centre of the hexagon ovoidal and of the greatest diameter of $\frac{1}{5}$ of an inch; this is set around by twelve smaller compressed ovoids, two upon each angle of the hexagon. All the small ovoids correspond with similar ones which invest the respective large ovoids of the neighboring hexagons; each pair then having the appearance of a single figure of double the dimensions; and the whole of them, together, forming raised ornaments to the buckler. See fig. 7, B.

It was one of these hexagons that we submitted to the chemical examination described in page 9; and, since the animal matter was, as we have shown, burned out, the residuum, which retained the hexagonal figure, was *lime*.

Fearing that with the blowpipe and spirit lamp we had not succeeded in driving off all the carbonic acid gas, we placed two portions in a Dutch crucible, and submitted them to the action of an anthracite furnace for eight hours; at the end of this time they had separated, were of the purest white color, and had lost nearly half their weight; i. e. from 16 grains they were reduced to 10; one portion of them was put into distilled water, which it took up with great rapidity, but without giving off any caloric. After the excess of water had evaporated, this portion remained unaltered. Another portion was dissolved, with effervescence, in diluted nitric acid.

* The plates belonging to the helmet have a hard, dull white surface, and present no appearance of this couche; but after treating them with acids, it partly separates and curls at the edges so as to be easily detected See fig. 7, C.

The hexagons, even in the dry state of our specimen, are easily separated by inserting a moderately sharp instrument into the interstices, or natural joints, at the anterior surface of the buckler; but the body of the hexagon cannot be divided without force and fracture. They also separate after maceration, or upon burning out the animal matter that occupies the interstices; and, in regard to those of the helmet, by contraction, on account of becoming very dry.

Each hexagon has on its interior surface a central depression, (see fig. 7, A.) which corresponds exactly with the prominence of the large ovoid on the opposite face, (see fig. 7, B.) each plate, thus forming a low arch, tending considerably to strengthen the whole of this part of the armor.

The skins of animals are, in general, by their great elasticity, admirably adapted to not only a free motion of the body, but to its gradual enlargement. When the envelope is unyielding, nature provides substitutes; one of these is to be found in the univalve shells of the mollusca, which gradually increase in length and diameter by continual additions at the opening. On the other hand, the hard envelopes of the articulated animals are *thrown off* when the parts contained require more room, and coverings better adapted to the enlarged dimensions are soon formed; but it is obvious that neither of these arrangements would meet the case of the Armadillo; and we find that by the above mentioned interstertial position of a flexible cartilaginous or fibro-cartilaginous matter, between the natural joints of the unyielding plates of carbonate and phosphate of lime in cells of animal matter, the armor is provided with the means of slightly extending its capacity. And at each angle of the hexagons is found the remains of a muscle, which was doubtless subservient to a *voluntary* movement of them. So each plate is capable of being increased in size by a gradual and continuous deposite at its sides. When these deposites are equal upon all the angles, the plate is enlarged without changing its figure; but any partial interruption of the deposite alters the shape of the plate. This accounts for the various angles and sizes of the hexagons.

On the superior face of each hexagon, in the angle of every small

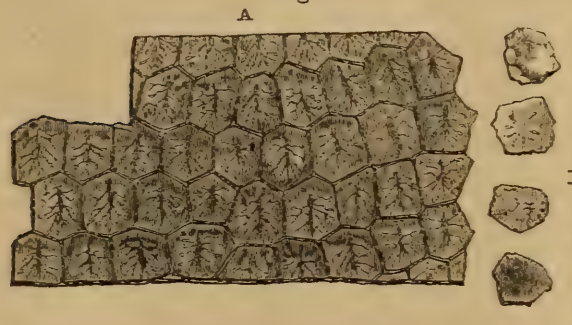
ovoid, is a foramen for the emission of a hair, or hair-like process; but no perforation is seen on the inferior face, except in the centre of the hexagon, and, of course, of the depression above described. See fig. 7, A.

The whole of this dermis is covered with an epidermis, somewhat resembling *scales;* which, in both outline and figure, corresponds with the dermis. See fig. 8. Its color is sometimes horny-white, and at others black, in which latter case the coloring matter appears to be on its *inner* surface. In the dry state of our specimen the scales separate readily from the dermis, adhering slightly among themselves. Under the blowpipe they are entirely consumed, emitting an odor of burnt horn.

Fig. 8.

Raspail is of opinion that the epidermis is nothing else than the external layer of the cutis, whose cells are emptied, flattened and dried up more and more, until, being separated from each other by the retraction of their sides, they fall off in the form of furacious scales.* If this is true, as a general rule, the Armadillo must form an exception, for its dermis and epidermis have *different elements.*

A Fig. 9. B



As to the internal structure of the hexagons, it is simple. Figure 9, A., represents a portion of the buckler after having been treated with muriatic acid, to render it transparent, and fig. 9, B., sections of the same in the natural state. It will be observed that all the other vessels diverge from one central one, which has its outlet on the inner face of the hexagon, through the foramen before described. Each of the diverging vessels terminates in a capsule, out of which issues a hair or hair-like process, passing through the foramen, in the angles of the small ovoids, as before noticed.

* New System of Organized Chemistry, p. 288.

Fig. 10.

No. 2. No. 1.

This organization, so appropriate for a part which contains fifty per cent. of animal matter, would have been unnecessary, had the hexagon been composed *entirely* of crystallized carbonate and phosphate of lime.

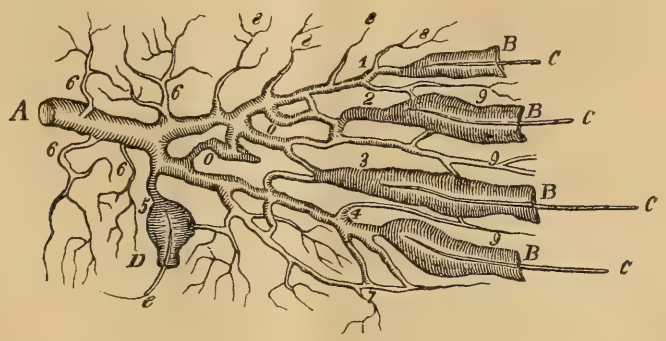
Figure 10, No. 1, represents the hexagons and parallelograms as connected together; No. 2 is a section of a parallelogram.

The hexagons of the helmet are much depressed. Fig. 11 represents one of them. Side No. 1 has three separate and two twin follicles. No. 4 has three follicles. Opposite to No. 2 are two foramina, which communicate with the superior surface. Between Nos. 3 and 4 are three small vessels, which do not terminate in follicles. The interior vessels are reticulated and anastomose, forming two ovoid figures, both of which communicate with the superior surface, one by 11 and the other by 12 foramina. On the interior surface are foramina, from 5 to 7. See fig. 11.

Fig. 11.

Between the hexagons first described and the first band is a line of parallelograms of the length of one-half of an inch, and breadth of one-fourth of an inch. The following figure, 12, represents the internal structure of one of them, magnified 250 diameters.

Fig. 12.



The main arterial trunk, A., lies horizontally, communicating with the interior of the armor by a foramen situate near the end of the parallelogram towards the hexagons. This main trunk divides, successively, into five horizontal limbs; four of which, viz. 1, 2, 3, and 4, after anastomosing, terminate near the other end of the

parallelogram in as many fusiform follicles, B., from each of which emerges, horizontally, a hair, or hair-like process, C. The fifth limb, No. 5, inclines abruptly to one side of the parallelogram, and after a much shorter course, comparatively, terminates in an orbicular capsule, D., from which, through a foramen communicating with the anterior surface, issues, vertically, another hair, or hair-like process, invested with a sheath, *e.* Besides these five limbs, there are branches, 6. Four of these, i. e. two on each side, issue out of the main trunk, below its first limb-fork. These subdivide into numerous twigs, which do not anastomose. From limb No. 4, about half way beyond its fork, is another and the largest branch of all, 7. This anastomoses with the limb, and divides into numerous twigs, but does not terminate in either a follicle or capsule. The limb on the opposite side, No. 1, above its fork, has four branches, 8, which do not anastomose or terminate in either follicle or capsule, but divides into numerous twigs. Between limbs Nos. 1, 2, 3, and 4, are three interfolical vessels, 9. These anastomose with the follicles, and open out at the end of the parallelogram. They are probably sebaceous or perspiratory organs.

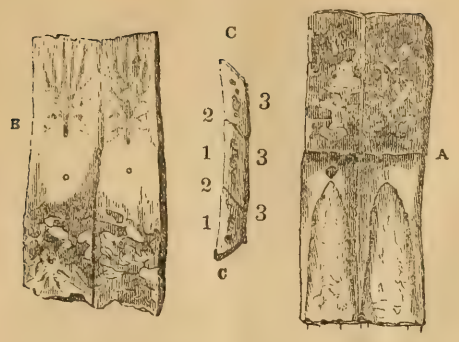
Some of the anastomosing vessels empty into culs de sac, *o*, approaching, in dimensions, almost to that of the main trunk. These are generally situated at, or near, the root of a follicle, and may be *reservoirs*.

Each of the above vessels may be, and probably are, accompanied by an artery and a vein; for the animal possesses the power of repairing and reproducing injured or lost plates; as is proved by a specimen of the Apara we have examined, that bears the marks of the operation having been performed.

Vessels of a still more complicated character are presented in the parallelograms of the bands. Four of these are represented by fig. 13. A. is the superior, and B. the inferior surface.

They are in length one inch and three-tenths, (of which five-tenths pass under the buckler,) in breadth six-tenths, and in thickness, where uncovered, one-twentieth; and where covered with the buckler, one-tenth of an inch. Each band is separated from the one adjoining by a white cartilaginous or fibro-cartilaginous substance, similar to that which separates the hexagons, before

Fig. 13.



described; and they are provided with muscles similar to those of the hexagons. The uncovered portion of each parallelogram is divided by seams into two large and two small acute angled triangles, truncated at the apex. In these seams are foramina, in number from six to eight; they pass between the partition of the epidermis, and are severally provided with vertical hairs, or hair-like processes. On the interior face of each parallelogram, fig. 13, B., may be seen two foramina, one larger than the other. The largest is the outlet of a main horizontal, arterial trunk, imbedded in this portion of the parallelogram; which trunk, after running horizontally a short distance, divides successively into four branches. These branches, after anastomosing, terminate respectively into as many fusiform follicles, out of each of which issues, horizontally, a hair, or hair-like process.

The trunk gives off lateral branches also, which terminate severally in orbicular capsules, from two to four in number, and corresponding with as many vertical hairs, or hair-like processes.

The smaller foramen is the centre outlet of another and smaller trunk, which immediately throws off limbs. These terminate respectively in orbicular capsules, corresponding with the four remaining vertical hairs, or hair-like processes. These limbs and capsules nearly surround the larger foramen, forming, together, an oval figure. All the above mentioned branches and limbs are provided with small twigs, which anastomose.

This bandular dermis, (if so it may be called,) where uncovered by the buckler, is surmounted by a horny epidermis, corresponding with it in shape; and, in the dry state of our specimen, separating from it readily, like that of the buckler, E. fig. 14; but the part

Fig. 14.

covered by the buckler is invested with several couches of muscle, D. fig. 15. The interior of this latter portion of the dermis, fig.

Fig. 15.

16. A., is filled with large, circular, oval, and ovoidal cells, formed by the circumvolutions of a horny,* intervening tissue. These cells communicate freely with each other, and occasionally with the exterior, by foramina. Upon this portion of the parallelograms there are no hairs.

Fig. 16.

Fig. 13. C., shows a vertical section of the upper end of three of these bands, and the muscular arrangement of that part of the armor may be there examined. 1. End of the bands, respectively. 2. The cartilaginous substance, and a muscle at each intersection. 3. The foramina of the muscles.

How are these plates formed? Are the cells constructed first, or are the animal and calcareous matters simultaneously deposited? To answer these questions with certainty, would require examinations into the *fœtal condition*. These we have not had it in our power to make. The animal whose armor came particularly under our notice, was, as we have before stated, a young one; along the margin of his upper jaw, from the point of the muzzle, towards the ear, is a row of plates exhibiting a gradual developement in size and organization, from the soft swelling,

* Cell walls are always proteine.

resembling a portion of glue, to the hard, horny, and calcareous hexagon. These we have made the subjects of minute microscopic examination; but nothing important upon this point has been elicited.

What is the function of the hair or hair-like processes which issue out of the hexagons and parallelograms? That they are not intended to keep the animal warm, appears from the smallness of their numbers; and from their intimate connection with the internal structure, it is probable that they are organs of secretion or of perspiration.

What is the function of the hairs of the abdomen? We examined some of them, taken from the Armadillo, which has a long tuberculous tail, the Tatou Poyou, or main jaune of Azara. They were lenticular, straight, flexible and elastic,—in length about three inches. Follicle generally penniform, sometimes terminating tuberously, at others in a sheath which invests the hair for the $\frac{1}{20}$th of an inch; anterior termination generally rounded and blunt, and occasionally cleaved. Color principally cinerous; the follicle of a clearer white. To the touch smooth, when passed through the fingers in either direction. We placed transverse sections under the microscope, but the results were not satisfactory; they appeared like homogeneous discs of a horny white color, and no organization could be detected. We then divided one of them longitudinally, and under the microscope could discern two distinct portions, viz: a comparatively thick outward covering or cuticle, of a yellowish horny color, and an interior bundle of very minute fibres, of a whiter horn color. These fibres we were able to separate. The hair-like processes of the plates, on the contrary, exhibited under the microscope, when similarly divided, but one appearance, viz., a homogeneous opaque mass, of a white horny color; no fibres were to be seen with the highest power we used.

We also treated both these hairs or hair-like processes with diluted nitric acid, with different results; those from the abdomen turned straw-yellow, and became semi-transparent, while those of the plates retained their original color and opacity.

From the above and other experiments, which it were tedious to enumerate, we came to the conclusion that the hairs of the

abdomen might be prolongations of nervous fibres. To an animal such as the Armadillo, possessing very little means of exercising the sense of feeling, owing to its peculiar covering, such a tactual apparatus might be of great advantage in traversing its subterranean retreats. We made some comparative examinations of these hairs, and the whiskers of some of the carnivora, the results of which, however, we will reserve until we come to describe these latter appendages.

ADVERTISEMENT.

The recent brilliant discoveries made in Physiology and Animal and Vegetable Anatomy, with the Microscope and chemical examinations, which owe the principal part of their success to its agency, have produced astonishment in the unskilful, and admiration in the scientific world. To enlarge the boundaries of this knowledge we have undertaken this work, in which we propose to devote these examinations to *hairs*, wools, furs, &c. The reader may, perhaps, be inclined to imagine that these tegumentary appendages have already undergone severe scrutiny, and that their organic structure has been completely displayed; but we assure him that much remains yet to be developed. Having discovered that a great deal that has been published is incorrect, we have commenced our labours with the firm determination to take nothing for granted, but to examine each hair, and to put down nothing of which we are not morally certain. We flatter ourselves that an investigation, thus conducted, will not be devoid of usefulness. To the scientific natural historian we offer no apology for entering upon his arena, determined, if possible, to make ourselves welcome guests. To the medical practitioner and student we would remark, that many are the diseases of the hair, some of which can be better understood by an acquaintance with its structure; that almost innumerable are the diseases of the skin; and that this organ and its piliferous appendages are so intimately connected, that the former cannot be completely understood without some information in regard to the latter. But this is not all; *hair*, *wool* and *fur* are objects of great utility in manufactures and the arts, and their study cannot, therefore, fail to excite general interest, especially in this country, where the history of every thing that can increase the wealth of the nation, or add to the comfort, or even to the luxury, of the people, is a legitimate object of pursuit. What discoveries we may be happy enough to make in the growth of wool, or the manufacture of fur, time alone can determine.

In a path so little trodden, it is to be expected that we should occasionally make mis-steps; but we trust that all such will be attributed to inadvertence, and we pledge ourselves to be ever ready to retrace them.

We propose to publish in Numbers—each one to contain about as much matter as the present—and we respectfully request our friends, and the friends of science, to aid us in obtaining subscribers—transmitting the lists with as little delay as practicable. The price of the numbers will be 62½ cents each, payable upon delivery.

We also solicit specimens of human hair—if ancient, from mummies; if recent, from foreigners, or our own Indians, either pure, or crossed by whites or negroes; hairs that have been produced in unusual places, or have been developed under peculiar circumstances; hairs of Albinos, idiots, lunatics, fœtal monsters, or of persons laboring under diseases of the hair or diseases of the skin likely to affect the hair. Bristles hair, fur or wool of superior quality, although grown upon ordinary animals, or the covering of any extraordinary mammal, hybrid, or cross breed, whether wild or domesticated. Hairs of amphibious mammalia, &c. &c. will be acceptable.

Each specimen should be accompanied with the particulars that render it curious. Wherever practicable, the follicle or root should be obtained.

We cannot close this brief announcement without returning thanks to numerous friends who have already obligingly furnished us with specimens for examination.

P. A. BROWNE,
M. W. DICKESON.

The Cuts are by Mr. Thomas I. Keily, from Drawings of Dr. Dickeson.