

## THE VIRGINIAN OPOSSUM\*.

THE opossum is an American animal, and easily distinguishable from all others, by two very singular characters. 1. Under the belly of the female there is a large cavity in which she receives and suckles her young. 2. In both male and

\* All the species of the opossum have two canine teeth in each jaw. The cutting teeth in each jaw are unequal. They have five toes on each foot; and the hind feet are formed like a hand, with a distinct thumb.—The Virginian opossum has a long sharp pointed nose, large, round, naked, and very thin ears, small, black, lively eyes, and long stiff hairs on each side of the nose, and behind the eyes. The face is covered with short soft hairs, of a dusky colour. Above each eye, there is a large white spot. The cheeks are whitish, and the sides of the neck of a dirty yellow. The hind part of the neck, and the back, are covered with soft, but uneven hairs, above two inches long, the bottoms of which are of a yellowish white, the middle part black, and the ends whitish. The sides are covered with dirty and dusky hairs, and the belly with soft, woolly, dirty white hair. The legs and thighs are black, the feet dusky, and the claws white. The base of the tail, for near three inches, is clothed with long hairs like those on the back, and the remainder with small scales; the half next the body is black, and the rest white. The tail has a disagreeable appearance, resembling the body of a snake, and has the same prehensile power as that of some monkeys. The body is round, and pretty thick, and the legs are short. The female, on the lower part of the belly, has a large pouch, in which the teats are lodged, and where the young shelter as soon as they are born. The length of one I examined was seventeen inches, and that of the tail fourteen; Pennant's *Synops. of Zood.* p. 205.

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and female, the first toe of the hind feet has no claws, and is separated from the rest, like the thumb

The Brazilian name of this animal is *surigae*, *surigae*, or *carigoeja*.

*Carigoeja jupatima*; *Pisón. Hist. Brasil.* p. 323.

*Carigoeja taibô*; *Margr. Hist. Nat. Brasil.* p. 222. *Rati Synops. Zood.* p. 182. 185.

Tlaquatxin; *Hernand. Hist. Mexic.* p. 300. Admiranda fera quam Indi vocant Tlaquatxin, Antonius Herrera Taquatxin dixit. Recentes Hispani scriptores, corrupto nonnihil nomine, Tlaquacum. Cardanus Chiurcam sive Chuciam; Stadenius Seruoi; nomenclator semi-vulpam. Raphe Hamon, in descriptione Virginis, opossumem dixit: Alii nocham, alii tsalapim, alii cerigomem dixere; *Enf. Nuremberg. Hist. Nat. Perigrin.* p. 156. *Note.* The description of this animal given by Nuremberg is copied verbatim from Hernandez.

*Cerigone*, according to Maffée; *Hist. des Indes, liv. ii.* p. 46. and Barleus, *Res gestæ in Brasiliâ*, p. 222. The *cerigone*, says Maffée, is a wonderful creature.—From its belly hang two pouches in which it carries its young, each of which adheres firmly to its teats, and never quits the hold till it is able to go in quest of food. *Note.* Maffée is wrong, when he mentions the opossum as having two pouches. However, when the dogs are swelled with milk, they raise a protuberance in the middle of the bag, which gives it the appearance of being divided into two. Maffée probably saw the animal in this state, which would lead him into the mistake.

Sarigoy; *de Lory*, p. 156.

Seruoi or seruoi; *Stadenius, Hist. Brasil.* p. 129.

Chiorca and chiorca, according to Oviedo and Cardan; *De Subsistentiis*, lib. x. *cap.* p. 531.

Opossumes; *Razb. Havnar. Descript. de la Virginie.*

Opossum; *de Laët, Hist. de Nouvelle Monde*, p. 88.

*Carigoeja seu Marisipiale Americanum*; *Anatomy of an Opossum* by Edward Tyson, London, 1698. *Phil. Trans.* No. 739. *Note.* Tyson described the female, and Cowper afterwards gave a description of the male; *Phil. Trans.* No. 290.

Opossum; *Cassidy's Carolina. Append.* p. 29. *Beccari's Virginia,*

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thumb in the human hand; while the other toes of the same feet are placed near each other, and armed with crooked claws. The first character has been remarked by some travellers and naturalists; but the second has entirely escaped them. It was first observed by Edward Tyfon,

*ginia*, p. 135. *Lafayette's Carolina*, p. 120. *Rochfort's Antilles*, vol. i. p. 283.

*Olla; Voyage de la Houton*, tom. ii. p. 44.

*Manitou; Hist. Gen. des Antilles*, par le P. du Tertre, tom. ii. p. 301.

*Paras, or Ravale; Hist. Nat. de Orinogue*, par Gamilla, tom. iii. p. 238.—Gamilla falls into the same blunder with Massé, by telling us, that the female opossum has two pouches.

*Rat sauvage; Mem. sur la Louisiane*, par Dumont, p. 83.

*Rat de bois, wood-rat; Hist. de la Nouvelle France*, par le P. Charlevoix, tom. iii. p. 333. *Hist. de la Louisiane*, par du Prat, tom. ii. p. 94.

*Simi-vulpes; Geyser. Quod.* p. 870.—*Icon. Quod.* p. 90. *Aldrov. Quod.* p. 223.

*Vulpes major pectora, cauda tereti et glabra; Barreræ, Hist. Franc. Equinox.* 1665.

*Le Manicou; Feaithé Obs. Peru.* tom. iii. p. 206.

*Mus marsupialis sylvestris, Brasiliensis leucæ ratine; Klein. Quod.* p. 59.

*Philander, opossum, seu Carigueya Brasiliensis; Seba*, tom. i. p. 56. tab. 36. *mus fig. 1. fœmina fig. 2.—Philander Orientalis; Seba*, tom. i. p. 61. tab. 38. *fig. 1.—Philander maximus Orientalis; Seba*, tom. i. p. 64. tab. 39. *Notes*, These three appellations, by which Seba means to point out three different animals, denote only the same animal, as shall be shown in the text.

*Philander saturate spadiceus in dorso, in ventre flavus, maculis supra oculos natis.—Philander, le Philandre; Brisson. Quod.* p. 207.

*Didolphis marsupialis, mamma octo intra abdomen; Linæ. Syst. Nat.* p. 71. *Amœn. Acad.* tom. i. p. 279.

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an English physician. He is the only author who has given a good description of the female\*; and, a few years after, Mr. Cowper, a celebrated English anatomist, communicated to Tyfon the observations he had made upon the male. Other authors, and particularly the nomenclators, who perpetually multiply species without necessity, have committed a number of blunders with regard to this animal, which we must endeavour to correct.

Our opossum is the same animal with the great Oriental philander of Seba†; for, of all the animals of which Seba has given figures, and to which he applies the names of *philander*, *opossum*, or *carigueya*, this alone has the two characters of a pouch under the belly, and thumbs without claws on the hind feet. Neither is the opossum an Eastern animal, but a native of the warm climates of the New World; for the two we have in the royal cabinet were brought from America. That of Tyfon was sent to him from Virginia. M. de Chanvallon, a correspondent of the Academy of Sciences at Martinico, who gave us a young opossum, recognised the other two to be real American opossums. It is agreed by all voyagers, that this animal is found in Brazil, New Spain, Virginia, the Antilles, &c. and none of them ever mention their having seen it

\* The Anatomy of an Opossum, London, 1698.

† Seba, tom. i. p. 64. tab. 39.

in the East Indies. Hence Seba deceives himself, when he calls them the *Oriental philanders*. He says, that his philander was sent him from Amboina, along with other curiosities, under the name of *coer-coes*; but he allows, at the same time, that it had been brought to Amboina from some other remote country\*. This confession is alone sufficient to throw a suspicion on the denomination of *Oriental philander*; for it is very probable that travellers may have transported this animal from America to the East Indies; but we have no proof of its being a native of Amboina; and the very passage quoted from Seba seems to indicate the contrary. The source of this error, in fact, as well as that of the name *coer-coes*, is to be ascribed to Piso, who says†, that, in Amboina, there is an animal, similar to the Brazilian opossum, which is called *cous-cous*. Piso mentions no authority for this assertion. It would be very singular, if it were true, that this animal is found in Amboina, and in no other part of the East Indies. Seba, on the contrary, remarks, that the one sent to him from Amboina

\* *Philander maximus orientalis fœmina*. Inter alia rariora et hocce animal nobis ex Amboina missum est, sub nomine *coer-coes*, eo quidem delatum ex ORIS REMOTIORIBUS; Seba, vol. i. p. 64.

† In Indiis Orientalibus, IDEQUE SOLUM, QUANTUM HACTENUS CONSTAT, IN AMBOINA similis bestia frequens, ad felis magnitudinem accedens; maculata ab incolis comeditur, si rite præparetur, nam alias fœtet. Nomen illi *cous-cous* inditum; *Pison. Hist. Nat. Brasil.* p. 323.

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was not a native of that place, but had been transported from a more distant country. But, though he was ignorant of the region from which his philander was brought, he has presumed to give it the epithet of *Oriental*. It is unquestionably, however, the same animal, as will appear from comparing his figure, tab. 39. with Nature. But what augments this error, at the same time that the author gives to the American opossum the name of the *great Oriental philander*, he exhibits to us another animal, which he believes to be different from the former, and calls it the *American philander*\*; and yet, from his own description, it differs from the great Oriental philander only in being smaller, and in having the spots above the eyes of a browner colour. These differences are too slight and too accidental to constitute distinct species; for he takes no notice of another difference, which, if it had any existence, would be much more essential, namely, that this American philander of Seba† has a sharp claw upon the thumbs of the hind feet, while his great Oriental philander has no claws on these thumbs‡. Now, it is certain, that our opossum, which is the true American one, has no claws on the hind thumbs. If any animal, therefore, with sharp claws on these thumbs, existed, like that represented by Seba in his 30th

\* Seba, tab. 36. fig. 1 and 2.

† Id. ibid.

‡ Id. tab. 39.

table,

table, it could not, as he maintains, be the American opossum. But this is not all: Seba gives a third animal under the name of the *Oriental philander*\*; of which, however, he makes no mention in his descriptions of the other two, but follows François Valentin, an author, as formerly remarked, who merits no confidence. This third animal is still the same with the two first. Hence it appears, that the three figures in Seba's 36th, 38th, and 39th tables, are one and the same animal; and it is probable, that the drawer, from inattention, has given sharp claws to the hind as well as to the fore thumbs, as in tables 36th and 38th, and that, being more exact in table 39th, he has represented the thumbs of the hind feet, as they really are, without claws. We are, therefore, persuaded that these three animals of Seba are only individuals of the same species, which is the same with that of our opossum, and that the slight differences in size and colour, mentioned above, proceed from age or from accident. The author himself allows, that the two animals in his 36th and 38th tables, differ only in size and some shades of colour†; and that the third, table 39th, differs from the two former in being larger only, and having the spots above

\* Seba, tab. 38. fig. 1.

† Est autem femella hæcce Americanis Philandris FORMINIS QUAM SIMILIMA; nisi quod pilis dorsalibus aliquantum saturatio fuscis vestita, et toto habitu procerior sit illis; Seba, vol. I. p. 61.

the eyes, instead of yellowish, of a brown colour. Seba remarks, 'That, according to Francis Valentini, the philander, table 38th, is the largest kind found in the East Indies, and especially among the Mallays, where it is called *pelandor Aroé*, that is, the rabbit of *Aroé*, though *Aroé* is not the only place where these animals are to be met with; that they are common in the island of Solor; that they are reared along with the rabbits, to whom they do no harm; that their flesh, which is excellent, is eaten by the inhabitants,' &c. These facts are extremely questionable, not to say false. 1. The philander, tab. 38th, is not the largest East India kind; for, according to our author, that represented in tab. 39th, which he likewise attributes to the East Indies, is larger. 2. This philander has no resemblance to the rabbit; and, consequently, is improperly called the rabbit of *Aroé*. 3. No voyager to the East Indies makes mention of this remarkable animal; neither is it found in any other part of the Old Continent. Seba himself seems to perceive not only the incapacity, but the unfaithfulness of the author he quotes: 'Cujus equidem rei,' says he, 'fides sit penes autorem. At mirum tamen est, quod D. Valentinus philandri formam haud ita descriptit prout se habet, et uti nos icones ad vivum factas prægressis tabulis exhibuimus\*.' But, to give a complete demonstration of the little credit

\* Seba, tom. I. p. 61.

due to the testimony of Francis Valentin, who has written a history of the East Indies in five folio volumes\*, it is sufficient to refer to what is said of him by Artedi†, and to the reproaches thrown upon his veracity by Seba himself‡. Valentin asserts, 'that the pouch of the philander' 'is a uterus, in which the young are conceived; that, after dissecting a female himself, he could find no other; that, if this pouch is not a real uterus, the teats are to the young what the pedicles are to fruits; that they adhere to these teats till they are full grown, and then separate as the fruit from the pedicle, after it arrives at maturity,' &c. The truth is, that Valentin, who assures us that these animals are extremely common in the East Indies, and particularly in the island of Solor, had never seen one of them in that country; that all he has said, including his most conspicuous errors, he has copied from Piso and Marcgrave, who both copied from Ximenes, and are wrong in every article they have added of their own; for Marcgrave and Piso, as well as Valentin, assert, in the most po-

\* Oed ne nescit Oost-Indien, &c. 1724.

† Multa scripsit Franciscus Valentini, quæ Judæus Appella credit. . . Ita comparatus est hic liber Belgicus, ut historicorum naturalium genuiorum et eruditum oculis nullo modo ferre possit; Artedi Ichthyologiae Hist. Literar. p. 55 et 56.

‡ Inde autem quam liquidissime detegitur error a D. Francisco Valentino commissus, circa historiam horum animalium; tom. iii. p. 273. . . Error absonus valde et enervis, inde forsitan ortum duxit, quod vir iste hanc animalium speciem haud debite examinaverit, &c.; Seba, vol. i. p. 64.

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sitive tone, that the pouch is the true uterus\*, where the young opossums are conceived. Marcgrave says, that he dissected a female, and found no other uterus. Piso goes farther, and tells us, that he dissected several females†, and never could discover any internal uterus; and to this assertion he adds another equally false, that this animal is found in Amboina. Let men now judge what credit is due to Marcgrave, Piso, and Valentin, the first of whom has examined with no attention, the second has augmented the errors of the first, and the third has copied from both.

I ask pardon of my readers for this long critical discussion. But, when errors are to be corrected, we can never be too exact, or too attentive, even to minute circumstances.

M. Brisson, in his account of quadrupeds, has implicitly adopted what he found in the works of Seba, and follows him both in his denominations and descriptions. He even proceeds a step farther than his author, when he makes three distinct species of the philanders, represented in tab. 36. 38 and 39. of Seba; for if M. Brisson had examined the idea given by Seba, he would have found, that the latter does not exhibit his

\* Hæc bursa ipse uterus est animalis, nam alium non habet, ut ex sectione illius comperi: In hac semen concipitur et cæculi formantur; Marcgrav. Hist. Brasiliens. p. 223.

† EX REITERATIONE horum animalium sectionibus, alium non invenimus uterum præter hanc bursam, in qua semen concipitur et cæculi formantur; Piso. Hist. Nat. Brasili. p. 323.

philanders



philanders as three distinct species. Seba never doubted, that an animal found in the warm climates of America, would not also be found in the warm regions of Asia. He denominated his animals Oriental or American, according as they came to him from the one or the other Continent. It is obvious, from the following passage, that he does not take the word *species* in a strict sense: 'This is the largest *species* of these animals;' p. 61. He adds, 'This female is perfectly similar to the female philanders of America; it is only longer, and covered on the back with hair of a deeper yellow.' These differences, as formerly remarked, are accidental varieties only, which are common among individuals of the same species at different ages; and, in fact, Seba never pretended to make a methodical distribution of animals into classes, genera, and species. He gives only figures of the different specimens in his cabinet, which he distinguishes by numbers, according to any varieties he perceived in their size, the tints of their colours, or the countries from which he obtained them. It is apparent, therefore, that M. Brisson had no authority for making three species of philanders, especially as he gives no distinctive characters, and makes no mention of the want of claws on the thumbs of the hind feet. He says, in general, that the philanders have *claws*, without making any exception. The philander, however, which he saw in the royal cabinet, had no claws on the thumbs

thumbs of the hind feet; and it appears to have been the only one he ever saw; since, in his book, there is no more than No. 1. marked with two asterisks. The chief error in Brisson's work is in the list of species, which is more numerous than that of Nature.

M. Linnæus is the only other nomenclator we have to examine. In this article, he is less exceptionable than in many others; for he has suppressed one of the three species of Seba\*. But he ought to have reduced them to one.

From the preceding examination, which has been made with the most scrupulous impartiality, it appears, that the *philander*, *opossum*, seu *carigüeya Brasiliensis*, of Seba, tab. 36. fig. 1, 2, and 3. the *philander Orientalis maximus*, tab. 39. fig. 1. the Oriental philander, No. 2. and the philander of Amboina, No. 3. of M. Brisson; and, lastly, the *marsupialis*, No. 1. and the *opossum*, No. 3. of Linnæus, are the same animal, and that this animal is our opossum, which is peculiar to South America, and was never seen in the East Indies, except when transported thither. I thought I had cleared up every ambiguity; but still some difficulties remain with

\* The Count de Buffon's strictures on the *Système Naturel* of Linnæus are adapted to the tenth edition; Buffon's criticisms, of course, have no application to the present state of Linnæus's system. The translator, therefore, thinks it unnecessary to insert them; and, he apprehends, the reader will not think himself injured by the omission.

regard to the *taibi*, which Maregrave \* has not represented as an animal different from the *carigueya*; but, nevertheless, Johnston †, Seba ‡, Klein §, Linnaeus ¶, and Brisson ¶, give it as a species distinct from the preceding. In Maregrave, however, we find the two names *carigueya* and *taibi* at the head of the same article, where it is said, that this animal is called *carigueya* in Brasil, and *taibi* in Paraguay. 'Carigueya Brasiliensibus, aliquibus Jupatima, Petiguaribus taibi.' He then gives Ximenes's description of the *carigueya*. After which, we find another animal called *taibi* by the Brasilians, *cachorro domato* by the Portuguese, and *bofschratte*, or *wood-rat*, by the Dutch. Maregrave says not that this animal is different from the *carigueya*; he represents it, on the contrary, as the male *carigueya*: 'Pedes et digitos habet ut foemella jam descripta.' It is obvious, therefore, that, in Paraguay, both the male and female opossum are called *taibi*, and that, in Brasil, the name *taibi* is given to the male, and that of *carigueya* to the female. Besides, the differences between these two animals, as they appear even from the descriptions given of them, are too slight to constitute distinct species. The most remarkable

difference is in the colour of the hair, which, in the *carigueya*, is yellow and brown, but gray in the *taibi*, whose hairs are white below \*, and brown or black at the extremities. It is more than probable, therefore, that the *taibi* is the male opossum. Mr. Ray † seems to be of this opinion, when speaking of the *carigueya* and *taibi*, he says, 'An specie, an sexu tantum a praecedente diversum?' Seba, however, notwithstanding the authority of Maregrave, and the rational doubts of Ray, gives, in tab. 36. fig. 4. the figure of an animal, which, without any hesitation, he calls *taibi*, and, at the same time, says, that it is the same with the *tlauquatzin* of Hernandez. This is to accumulate error upon error; for, from the acknowledgment of Seba himself, his *taibi*, which is a female, has no pouch under the belly ‡, and Hernandez makes this pouch the chief character of his *tlauquatzin*. The *taibi* of Seba, therefore, cannot be the *tlauquatzin* of Hernandez, because it wants the pouch, nor the *taibi* of Maregrave, because it is a female. It is certainly another animal, ill drawn, and worse described, to which Seba has thought proper to give the name of *taibi*, and

\* The hair of the wood-rat is of a fine silver gray colour. Some of them are seen totally white. The female has, under her belly, a purse which she can open and shut at pleasure; *Charlevoix's Descript. de la Nouve. France, tom. iii. p. 334.*

† Rall Synops. Quad. p. 185.

‡ Marsupio tamen pro recondendis catulis caret hac species; *Seba, tom. i. p. 58.*

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\* Maregrave, *Histor. Natur. Brasiliens.* p. 223.

† Johnston, de Quadruped. p. 95.

‡ Seba, vol. i. p. 57. tab. 36. fig. 4.

§ Klein, de Quadruped. p. 59.

¶ Linnaeus Syst. Nat. edit. 10. p. 54. No. 2.

¶ Brisson, Regn. Anim. p. 290.

absurdly refers it to the tlaquatzin of Hernandez, which, as formerly remarked, is the same with our opossum. Brisson, and Linnaeus, with regard to the taiibi, have blindly followed Seba. They have both copied Hernandez's blunder as to the tlaquatzin, and made an equivocal species of this animal, the one under the name of the *Brasilian philander*\*, and the other under that of *philander*†. The true taiibi of Marcgrave and Ray, therefore, is neither the taiibi of Seba, nor the philander of Linnaeus, nor the Brasilian philander of Brisson; and the two latter are not the tlaquatzin of Hernandez. The taiibi of Seba, if it had any existence, would be an animal different from all those mentioned by the above authors, and would require a new denomination. In fine, as the male opossum has no pouch, it is not surprising that the male and female have been considered as different animals, and that the female has got the name of the *carigüeya*, and the male that of the *taiibi*.

Edward Tyfon dissected and described the female opossum with great accuracy. In his individual, the head was six inches long, the body thirteen, and the tail twelve. The fore legs were six inches in length, and the hind legs four inches and a half. The circumference of the body was

\* *Philander pilis in exorta albis, in extremitate nigricantibus vestitus.* . . . *Philander Brasilensis; Regn. Anim. p. 290.*

† *Didelphis philander, cauda basi pilosa, auriculis pendulis, mammis quaternis; Syst. Nat. p. 72.*

from fifteen to sixteen inches; and that of the tail, at its origin, three inches, and only one toward the extremity. The head across the eyes was three inches broad, gradually diminished to the nose, and resembled the head of a pig more than that of a fox. The orbits of the eyes were much inclined in the direction from the ears to the nose. The ears were rounded, and about an inch and a half long. The aperture of the mouth was two inches and a half, measuring from one of the angles of the lips to the end of the muzzle. The tongue was pretty narrow, three inches long, rough, and full of small papillæ, directed backward. There were five toes on the fore feet, all armed with crooked claws, and an equal number on the hind feet, four of which only had claws, and the fifth, which is the thumb, was separated from the rest, placed in a lower situation, and had no claw. There was no hair on the claws, which were covered with a reddish skin, and nearly an inch in length. The palm of the hands and feet was large, and there were fleshy callosities under all the toes. The tail was covered, for two or three inches from its origin, with hair, and afterwards, to the end, with a smooth scaly skin. The scales were whitish, nearly hexagonal, and regularly placed, so as not to encroach on each other, being all separated by a small circle of skin, which was of a browner colour than the scales. The ears were naked, thin, and membranous, like the wings of



a bat; they were also very open, and the auditory canal was large. The upper jaw was a little longer than the under. The nostrils were large, the eyes small, black, prominent, and lively. The neck was short, the chest broad, and the whiskers like those of the cat. The hair on the fore part of the head was whiter and shorter than that on the body: The back and sides were ash-coloured, mixed with some small tufts of black and whitish hairs; the belly was browner, and the legs more dusky. Under the belly of the female, there was an aperture about two or three inches long, formed by two folds of skin, which composed a pouch thinly covered with hair internally. This pouch contained the teats. The young, as soon as brought forth, go into this pouch in order to suck the mother, and acquire so strong a habit of concealing themselves, that, after arriving at a considerable size, they continue to take refuge in the pouch, whenever they are alarmed. This pouch the animal can open or shut at pleasure, which it performs by means of several muscles, and two bones, that are peculiar to the opossum. These two bones are placed before the os pubis, to which they are attached by their base. They are about two inches long, and gradually diminish in thickness from the base to the extremity, and serve as a fulcrum to the muscles which open the pouch. The antagonists of these muscles shut the pouch so close, that, in the living animal,

animal, it cannot be seen, unless when forcibly dilated by the fingers. In the inside of the pouch there is a number of glands, which secrete a yellowish substance of so disagreeable a smell, that it infects the whole body of the animal. This matter, however, when dried, not only loses its disagreeable odour, but acquires a perfume which may be compared to that of musk. The pouch is not, as has been falsely asserted by Marcgrave and Piso, the place where the young are conceived. The female opossum has an internal uterus, which differs, indeed, from that of other animals, but where the young are conceived and retained till the moment of their birth. Tyson \* tells us, that, in this animal, there are two uteri, two vaginae, four cornua uteri, four Fallopian tubes, and four ovaria. From the dissections of M. Daubenton, though he agrees not with Tyson in every article, it is certain, that, in the generative parts of the opossum, there are several parts double, which are single in other animals. The glans penis of the male, and the glans clitoridis of the female, are forked, and have the appearance of being double. The vagina, which is single at its entrance, afterwards divides into two canals, &c. This structure is extremely singular, and differs from that of all other quadrupeds.

\* We shall, therefore, here take a survey and an account of these parts; and we find that there are *two ovaria, two tubes Fallopianæ, two cornua uteri, two uteri, and two vaginae uteri*; Tyson, *Anatomy of an Opossum*, p. 36.

The opossum is an original native of the warm countries of the New World. He appears not, however, to be so strictly attached to warm climates as the armadillo; for he is found not only in Brasil, Guiana, and Mexico, but likewise in Florida, Virginia\*, and other temperate regions of America. He is a very common animal; because the female produces often, and, according to most authors, four or five†, some say six or seven, at a time. Maregrave assures us, that he has seen six living young in the pouch of the female‡. These young ones were about two inches long, very agile, and came out and went into the pouch several times a day. When new born, they are very small. According to some travellers, when they escape from the uterus, go into the pouch, and attach themselves to the teats, they exceed not the size of flies§. This fact is not so much exaggerated

\* The opossum is common in Virginia and New Spain; *Hist. Nat. des Antilles*, p. 122.

† Quateros quinosve parit catulos, quos utero conceptos, eductoque in lucem, alvi cavitare quadam, dum adhuc parvuli sunt, condit et servat, &c.; *Hernand. Hist. Mex.* p. 330.

‡ Hæc ipsa quam describo bestia sex catulos vivos et omnibus membris absolutos, sed sine pilis, in hac bursa habebat, qui-etiam hinc inde in ea movebantur; quilibet catulus duos digitos erat longus, &c.; *Maregrave, Hist. Bras.* p. 222. They have a pouch under the belly, where they carry their young, six or seven of which are brought forth at a litter; *Descript. de Nouv. Monde, par de Lait.* p. 485.

§ The female opossum has a double belly, or rather a pendulous membrane that covers the whole belly, without being fixed

gerated as might naturally be imagined; for we have seen, in an animal whose species has a great affinity to that of the opossum, young attached to the teats, which were not bigger than large beans; and it is probable, that, in this animal, the uterus is only a place destined for the conception and first formation of the fœtus, the exclusion of which being earlier than in other quadrupeds, its growth is finished in the pouch, where it enters the moment after its premature birth. No person has ascertained the time of gestation in the female opossum, which is probably much shorter than in any other quadruped: And, as this premature exclusion of the fœtus is a singularity of Nature, we must earnestly recommend it to those who have an opportunity of observing the opossum in its native country, to endeavour to discover the time the females go with young, and; after birth, how long the young ones remain attached to the nipples. This last observation is both curious in itself, and may be productive of utility: From it we may perhaps learn some method of pre-

to it, the inside of which may be seen after the animal has once brought forth. At the hinder part of this membrane, there is an aperture, into which the hand may be introduced. It is here where the young retire, either to avoid danger, or for the purposes of sucking and sleeping. In this manner they live till they are able to procure food for themselves. . . . I have seen young ones attached to the teats, when they exceeded not the size of a fly. They never quit the teats till they are as large as mice; *Hist. de la Virginie*, p. 220.

serving the lives of infants who come into the world before the natural period.

That the young opossums, therefore, continue attached, and pacted, as it were, to the teats of the mother, till they acquire strength and growth sufficient to enable them to move about with ease, is a fact no longer to be doubted. Neither is it peculiar to this species, as will appear from the history of the *marmoset*, or murine opossum, which is given in the next article. The female of this last species has no pouch under its belly, like the female of the former. It is not, therefore, to the conveniency of a secure retreat, afforded by the pouch, that the effects of adhering long to the teats, and acquiring growth in this immovable situation, are to be ascribed. I make this remark to prevent the pouch from being regarded as a second uterus, or at least as a shelter indispensably necessary to young which are prematurely brought forth. Some authors mention, that the young remain fixed to the teats for several weeks\*. Others say, that they continue in the pouch during the first month of their age only†. It is an easy operation to

\* The young are attached to the teats, and remain several weeks in this situation, till they acquire strength, the use of their sight, and a proper covering of hair. They then fall into the membrane, from which they go out and return at pleasure; *Hist. de la Virginie*, p. 220.

† Septem plus minusve ut plurimum uno parte excludit fœtus, quos donec menstruum ætatem attingant, pro lubitu nunc alvo recondit, nunc iterum prodiit; *Ralsb. Hamer. apud Niremberg*, p. 157.

open

open the pouch of the mother, and to examine and count the young without incommoding them. They never quit the teats, which they hold with their mouths till they have strength enough to walk. They then fall into the pouch; and afterwards go out\* in quest of food†. They often return to the pouch to sleep, to suck, and to conceal themselves when danger is apprehended; then the mother flies, carrying her whole offspring along with her. Her belly seems not to be enlarged till long after she has brought forth, and till the young have acquired some bulk; for, during the time of gestation, her size is not perceptibly augmented.

\* After bringing forth, the mother puts her offspring into the pouch. They instantly fix upon the teats, and continue to feed upon the milk in this secure and warm retreat. . . . As soon as they are able to move about upon the grass, the mother opens her pouch, and allows them to escape, &c.; *Mém. de la Louisiane, par DuRoi*, p. 84.

† The mother brings forth her young blind and naked, and with her fore paws puts them into the pouch, which is a kind of uterus, where they find an agreeable warmth, &c. . . . She takes them not out of this pouch till they have the use of their eyes. She then carries them to some rising ground where no danger is to be apprehended; and, having opened her pouch, she makes them come out, exposes them to the rays of the sun, and amuses them by sporting and playing. Upon the smallest noise, or suspicion of danger, she soon recalls them by a cry *tic, tic, tic*, and they run into the pouch for shelter, &c.; *Saba*, vol. i. p. 56.—When the mother hears any suspicious noise, she gives a signal by a certain cry, which the young understand, run instantly to their protector, and return into the pouch; *Mém. de la Louisiane*, p. 85.

From

From inspecting the form of the feet, it is easy to perceive, that these animals must walk ill and run slowly. A man, accordingly, it is said, may easily seize them without accelerating his pace\*. As a compensation, however, they climb trees with great facility†, and conceal themselves among the leaves, in order to seize birds‡; or rather they suspend themselves on a branch by the tail, which is so muscular and flexible||, that it is capable of wrapping round

\* This animal is so slow, that he is very easily taken; *Mem. de la Louisiane, par Dumas, p. 83.*—I never saw any animal move so slowly; for I have often taken one at my ordinary pace; *De Pratz, Hist. de Louisiane, tom. ii. p. 93.*

† Scandit arbores incredibili pernicitate; *Hist. Mex. p. 330.*—He mounts trees with surprising alacrity; and, like the fox, makes great havoc among domestic fowls. He does no other mischief; *De Lait, p. 143.*—Hoc animal fructibus arborum vescitur. Ideoque non solum ob id arbores scandit, sed etiam cum castelis in crumena inclusis, magna agilitate de arbore in arborem transit; *Petrus Martyr, Ocean. decad. 1. lib. ix. p. 21.*

‡ Facet animal instar vulpis aut martis: Mordax est; vescitur libenter gallinis, quas rapit ut vulpes, et arbores scandendo avibus insidiat: Vescitur quoque sacchari canis, quibus sustentavi per quatuor septimanas in cubiculo meo; tandem feni cui alligatum erat se implicant, ex compressione obit; *Margrav. Hist. Brasl. p. 223.*

|| Cauda . . . . qua mordicus firmiterque quicquid apprehendit retinet; *Hernand. Hist. Mex. p. 330.*—His tail is adapted for laying hold of objects: It will, even when seized, wrap round a man's finger. . . . The female, when taken, allows herself, without shewing the smallest sign of life, to be suspended by the tail above a fire. The tail adheres of itself; and both the mother and her young thus perish; for no torture is sufficient to make her open her pouch; *Hist. de la Louisiane, par M. le Pègre du Pratz, tom. ii. p. 94.*

any

any thing it seizes more than once. In this situation, with his body suspended, and his head hanging downwards, he will remain very long, waiting for the approach of small birds\*. At other times, he leaps from one tree to another, nearly in the same manner as the monkeys with prehensile tails, whom he also resembles in the structure of his feet. Though carnivorous, and even greedy of blood, he eats reptiles, insects, sugar canes, potatoes, roots, and the leaves and bark of trees†. He might easily be reared as a domestic animal‡; for he is neither mis-

\* He is very fond of birds and poultry; and, accordingly, he enters boldly into the court-yards and hen-houses. He even goes into the fields to eat the mahi which is sown there. The instinct with which he hunts his prey is extremely singular. After killing a small bird, he does not eat it immediately, but lays it down, in an exposed situation, near a tree. He then mounts the tree, suspends himself by the tail on a branch which is nearest to the bird, and waits patiently till some carnivorous bird comes to carry it off, upon which he instantly darts, and makes a prey of both; *Mem. de la Louisiane, par Dumas, p. 84.*—He hunts during the night; and wages war against the poultry, whose blood he sucks, but does not eat the flesh; *Hist. de la Louisiane, par M. le Pègre du Pratz, p. 93.*

† Vescitur cohortalibus quas vulpecularum mustelarumve sylvestrum more jugulat, illarum sanguinem absorbens, cetera innoxium ac simplicissimum animal. . . . Pascitur etiam fructibus, pane, oleis, frumentis, aliisque, veluti nos experimento cognovimus, alentes istud domi, ac in deliciis habentes; *Hernand. Hist. Mex. p. 330.*—He climbs trees with great alacrity, and feeds upon birds. Like the fox, he preys upon poultry; but, when prey of this kind fails him, he eats fruits; *Hist. de Antilles, p. 121.*

‡ Vicinitat carnis et fructibus, herbis et pane; idioque a multis animi gratia domi utitur; *Margrav. Hist. Brasl. p. 222.*

chievous

chievous nor ferocious, and is easily tamed. But he disgusts by his smell, which is ranker than that of a fox \*. His figure is also disagreeable; for his ears resemble those of the ounce, his tail is like a serpent, his mouth stretches near to his eyes, and his body has always a dirty appearance; because his hair, which is neither smooth nor curled, seems as if it were covered with dung †. The offensive odour proceeds from his skin; for his flesh is not bad ‡. He is one

\* The opossum resembles the Spanish fox; but he is smaller, and has a more unsupportable smell; *Descript. des Indes Occidentales, par de Lait, p. 85.*

† They have a hideous aspect, and seem always to be covered with dung; *Mém. de la Louisiane, par Dumas, p. 83.*—Their hair is gray, and, though fine, it is never smooth. The female natives spin it, and make garters of it, which they afterwards dye red; *Hist. de la Louisiane, par M. le Page du Pratz, tom. ii. p. 94.*

‡ Testatur ipse Raphe comedisse hoc animal, et esse grati et salubris nutrimenti; *Nierenberg, Hist. Nat. Peregria. p. 157.*—Caribbeas hujus animalis non solum Indi libentissime vescuntur, veram etiam hanc exterorum animalium quascunque carnes gustu, sativitate nobilitates, antecellere prædicant. Quapropter legitur in historia Indica, quod habitatores insule Cubæ, observantes magnam horum animalium quantitatem vagantium super arbores secus littora insule crescentes, clanculum accedentes, et de improvviso, magno impetu arborem excutientes, has belluas cadere in aquam cogunt; tunc innatantes illas apprehendunt, postea in cibos multifarie coquunt; *Aldrov. de Quadrup. Digit. lib. ii. p. 225.*—The flesh of the wild rat is very good, having nearly the same taste as that of a pig; *Mém. de la Louisiane, par Dumas, p. 83.*—The flesh of this animal is excellent, and in taste resembles that of a pig; *Hist. de la Louisiane, par M. le Page du Pratz, p. 94.*—The opossum is a stinking animal; but his flesh is very good; *Voyage de Corentin, tom. i. p. 176.*



PLATE CLXI.



VIRGINIAN OPOSSUM.

PLATE CLXII.



FEMALE VIRGINIAN OPOSSUM.

of those animals to which the savages give a preference in their hunting, and whose flesh they eat with pleasure.

## S U P P L E M E N T.

M. De la Borde, King's physician at Cayenne, informs me, that he fed three opossums in a small cask, where they suffered themselves to be managed with ease. They eat fish, flesh raw or roasted, bread, biscuit, &c. They licked each other perpetually, and made the same purring noise as cats do when caressed.

' I did not perceive,' says he, ' that they had any bad smell. Some species are large and others small \*. They all carry their young in a pouch under their bellies; and the young never quit the teats, even when sleeping. The dogs kill, but do not eat these animals. They make a kind of grunting noise, which extends to no great distance. They are easily tamed. They go into the hen-houses and devour the fowls. Their flesh is not good to eat: In cer-

\* There was lately sent to the Royal Cabinet, from Cayenne, a skin of one of these small opossums, which, though the animal was an adult, exceeded not three inches and a half in length, and the tail was four inches and a half long.

'tain species, its odour is so insupportable, that  
'the animal receives the epithet of *stinking* from  
'the inhabitants of Cayenne.'

These stinking opossums must not be confounded with the true *monffettes*, or stinking weasels, which constitute a very different genus of animals.

M. de Vosmaër, director of the Prince of Orange's cabinet of Natural History, has added a note to p. 6. of his description of a flying squirrel, published at Amsterdam in the year 1767, in which he says,

'The *coescoes* is the *bosch* or *beufruit* of the  
'East Indies, the *philander* of Seba, and the  
'*didelphis* of Linnæus. The learned M. de  
'Buffon (see above, p. 407.) denies absolutely its  
'existence in the East Indies, and limits it entirely  
'to the New World. We can, however, assure  
'this learned naturalist, that Valentin and Seba  
'were right in making these animals common  
'to Asia and America. Last summer, I myself  
'received a male and female from the East  
'Indies. The same species has likewise been  
'transmitted from Amboina to Doctor Schloffer  
'of Amsterdam. The chief difference between  
'the *coescoes* of the East and that of the West  
'Indies, consists, according to my observation,  
'in the colour of the hair, which, in the East  
'India male, is all of a yellowish white: That  
'of the female is a little browner, with a black,  
'or rather brown line on the back. The head  
'of

'of the West India kind is shorter; but the head  
'of the male appears to be longer than that of  
'the female. The ears of the East are much  
'shorter than those of the West India species.  
'The description of the second species, mentioned by Valentin, is too diffuse to afford any  
'certain information.'

That M. Vosmaër received male and female animals from the East Indies, under the denomination of *coescoes*, I have no reason to doubt. But the differences which he himself points out between the *coescoes* and the opossums, may lead us to conclude that they are not animals of the same species. I acknowledge, however, that M. de Vosmaër's criticism is just, when he remarks, that I made Seba's three philanders the same animal, whilst, in fact, the third, represented in his 39th plate, is a different species, and is found in the Philippine Islands, and, perhaps, in some other parts of the East Indies, where it is known by the name of *coescoes*, *cuscus*, or *cufos*. In the voyage of Christopher Barchewitz, I find the following notice:

'In the island of Lethy, there are *cuscus* or  
'*cufos*, whose flesh has nearly the taste of that of  
'a rabbit. In colour they resemble the marmot.  
'The eyes are small, round, and brilliant. The  
'legs are short; and the tail, which is long,  
'has no hair on it. This animal leaps from one  
'tree to another, like the squirrel, and then fixes  
'its tail round a branch, that it may eat the fruit  
'more commodiously. It diffuses a disagreeable  
'able

'able odour, like that of the fox. The female  
'has a pouch under the belly, into which her  
'young go out and in below her tail. She leaps  
'from one tree to another, conveying her  
'young in this pouch \*.'

From the pouch under the belly, and the prehensile tail, it appears, that the cuscus or cufos of the East Indies is really an animal of the same genus with the American opossum. But this is by no means a proof that it belongs to the same species with any of those which inhabit America. This would be the only example of such a coincidence. If M. Vosmaër had engraven the figures of these coescos, as he mentions in the text, we would have been enabled to form a more complete notion of the similarities and differences which subsist between the Asiatic coescos and the American opossums. But I am still persuaded that those of the one Continent will never be found in the other, unless they are transported thither. I refer the reader to what I have said on this subject in p. 407. of this volume.

We mean not to deny the possibility of equal climates, in both Continents, producing some animals of the precise same species. We formerly remarked, that the same temperature, in different parts of the globe, should produce the same beings, both in the animal and vegetable kingdoms, if all other circumstances were equal. We treat not here, however, of philosophical possibilities, which may be more or

\* Voyage de Barchewitz, p. 532.

less

less probable, but of a very general fact, of which numberless examples may be given. It is certain, that, when America was discovered, none of the following animals existed in the New World: The elephant, the rhinoceros, the hippopotamus, the camelpard, the camel, the dromedary, the buffalo, the horse, the ass, the lion, the tiger, the apes, the baboons, and a number of others, which I have formerly enumerated, p. 111 of this volume. In the same manner, the tapir, the lama, the pécari, the jaguar, the cougar, the agouti, the paca, the coati, the sloth, and several others formerly mentioned, did not exist in the Old Continent. Is not this multitude of examples sufficient to guard us against pronouncing, like M. Vosmaër, that such and such animals belong equally to the southern regions of both worlds?

The following passage should be referred to the Indian cuscus or cufos:

'In the Malucca islands,' Mandellso remarks,  
'there is an animal called *cufar*, which dwells  
'on trees, and feeds on their fruits. It resembles a rabbit, and has thick, frizzled, coarse  
'hair, of a mixed colour between gray and  
'red. The eyes are round and vivacious, the  
'feet small, and the tail so strong, that the animal hangs by it on the branches, in order the  
'more easily to reach the fruit \*.'

\* Voyage de Mandellso, suite d'Oltariass, tom. ii. p. 384.

In this passage no mention is made of the pouch under the belly, which is the most distinguishing character of the opossums. But I still maintain, that, if the cufos of the East Indies has this character, it is certainly a species which approaches very near to the American opossums; and I shall be inclined to think that it differs from the opossum nearly in the same manner as the jaguar differs from the leopard. Of all the animals belonging to the southern climates of both Continents, the two last, without being of the same species, make the nearest approach to each other.

## THE MURINE OPOSSUM\*.

THIS species seems to make a very near approach to the former. They both belong to the same climate, and to the same Continent.

\* This opossum has long broad ears, rounded at the end, and thin and naked. The eyes are encompassed with black. The face, head, and upper part of the body, are of a tawny colour, and the belly of a yellowish white. The feet are covered with short whitish hair. The toes are formed like those of the preceding species. The tail is slender, and covered with minute scales to the very rump. The length, from nose to tail, is about six inches and a half, and that of the tail the same. The female wants the pouch or false belly; but, on the lower part, the skin forms on each side a fold, between which the teats are lodged. This species varies in colour. I have seen one from Guiana, which was brown above, and whitish beneath; Pennant's *Synops.* of *Zoöl.* p. 207.

The *marmos*, *marmosa*, is the Brazilian name of this animal. The negroes call the Virginian opossum *marmos*, and the marmos, which is smaller, the *rat manico*.

Mus sylvestris Americanus *scalopes* dictus; *Seba*, *tem. i.* p. 46. *tab. 31. fig. 1 & 2.* *Note.* The name *scalopes*, given by Seba to this animal, and which Klein and Brisson have adopted, is very ill applied. The *scalopes* of the Greeks is certainly not the marmos of Brasil. Besides, it is impossible to determine, from the writings of the ancients, what animal they meant by the name *scalopes*: Ad finem, quidam mares sunt quos *scalopes* vocant, ut Schellinlus Aristophanis in *Acharnensibus* animadvertit; *Aldeov. de Zoöl. Digit. Prosp.* p. 416. This, I believe, is the only notice we have concerning the *scalopes*, and it is not sufficient to point out a particular species, and far less can it justify the application of the name to an animal of the New World.

*Philander faturatus* spadiceus in dorso, in ventre dilute flavus, pedibus albicantibus; *Brisson. Zoöl.* p. 211.