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DESCRIPTION of the Species of North American Tortoises.  
By Major J. LE CONTE of the U. S. Army, F. L. S. &c.

*Read December 7, 1829.*

NOTWITHSTANDING all that has been written on the subject of American Tortoises, they appear to be as yet but imperfectly known. It is therefore hoped that this endeavour to reduce our knowledge of these animals to some degree of certainty, will be favorably received. It is not offered as any thing perfect, but merely contains descriptions of such species as have fallen under my own observation. Many more undoubtedly yet remain to be described and named, and there is reason to believe, from certain scarcely reconcileable differences observed in one or two species, that some confusion yet exists in the determination of their true characters.

I have enumerated and described in this paper, exclusive of two that I do not consider well established, seventeen species; two more than have been attributed to this country; and, at the same time, have shown as having no existence, ten that had been received by the highest authority in Europe. It is to be hoped that the most scrupulous caution, as well as the long time, and the minute attention devoted to a favorite subject, have made me avoid many errors which others have fallen into.

In Daudin's Natural History of Reptiles, which contains the descriptions of fifty species of this genus, collected from all parts of the world, fifteen at least are non-entities, being either extremely young, and therefore having no character, or else mere varieties. Fourteen of his species are inhabitants of this country, but two of these are duplicates of others. Schoepflin has done better, but of the twenty-four species which he describes, three should be stricken out. More detailed ob-

servations on these errors, will be affixed to those species to which they apply.

With the exception of *Trionyx*, the name of the old Linnean genus *Testudo* has been retained, because I could not conscientiously adopt any of the modern divisions which have been proposed. The monstrous absurdity which runs through these is as shocking to all natural method, as it is insulting to common sense. Taking Merrem's division as the newest and most approved, what can we think of the *Testudo Muhlenbergii* being separated from the genus *Emys*, and placed in what he calls *Chersine*; again, who would have dreamed of uniting the *Testudo clausa* with the *T. pensylvanica* and *T. odorata*; and what is still worse, making an accidental variety of the last species, which belongs to his *Terrapene*, a different genus, *Emys*? Can a system which admits of such absurdities, be conformable to nature or to sense?

Were I to propose a division of these animals into different genera, it strikes me that the following would be the most natural:

First.—Such as have the sternum furnished in a greater or less degree with wings which are a prolongation of the pectoral and abdominal sections, and joined to the chest by bony commissures: these wings are generally supported on each side by a smaller bony process, furnished with a plate, which may be termed the supplementary plate of the wings. The marginal plates are twenty-five, and the sternal twelve. This would include the *Chersine* of Merrem, (*Testudo* of others,) and the *Emys*; but if all the species of the former have the two caudal marginal plates united into one, as is the case in the only species which we have, this character, joined with the indistinct toes and the terrestrial habit, would separate it from the other.

Second.—Such as have the sternum joined to the shell by bony commissures, but the supplementary plates interposed between the shell and the wings, the sternum generally (in

young ones always,) more or less jointed: marginal plates twenty-three, sternal eleven.

Third.—Such as have the sternum joined to the shell by a membrane, as in the *T. clausa*: in this the sternum is bivalve, but whether this should be taken as a generic mark, remains yet to be determined. Some European species, I believe, have the sternum joined to the shell in the same manner: marginal plates twenty-five, sternal twelve.

Fourth.—Such as have the sternum joined to the shell by wings, which are a prolongation of the pectoral sections alone, the abdominal being wanting,) and the supplementary plates interposed between the shell and the wings: marginal plates twenty-five, sternal ten. This is our *T. serpentina*.

These observations relate only to the Tortoises which are natives of our country; how far they may be applicable to those which inhabit Europe and Asia it is impossible to say, as there is no possibility of inspecting a numerous collection of the species of this genus.

## I. TRIONYX.

### I. TRIONYX FERON.

Testa cartilaginea, ovalis, integerrima, antice ad marginem tuberculata, disco lineis brevibus, longitudinalibus, tuberculatis: os labiatum, antice nudum, labiis revolutis oppositis: pedes antici squamis tribus latis et acutis supra et antice, et duobus tuberculis oblongis postice instructi; pedes postici squama unica infra et postice: cauda brevis.

*Testudo ferox*, Gmel. &c. *T. cartilaginea*, ejusd. *T. Bodarti*, Schneider. Leipz. Mag. zur. Natur. und Oecon. 1706.

III. p. 263. & II. *Trionyx spiniferus*, (spinifer) Le Sueur, Mémoires du Museum d'histoire naturelle, ann. 8. fascic. 4, p. 267. Soft-shelled turtle, vulg.

Shell oval, entire, very much depressed, bony in the middle, cartilaginous on the sides, dusky, irregularly mixed with brown, furnished on the fore part of the margin with thickly set round and pointed tubercles, and on the disc with short longitudinal raised and tuberculated lines, which in young ones are only perceptible on the hind part; sternum white, entire, oval and ample on the fore part and extending beyond the shell, bony only in the middle, hind part oval, suddenly contracting from the wings, reaching but half way to the end of the shell and bony to the edge. Skin above cinereous brown or brownish, dusky, in some spotted with darker, beneath white. Head large, tapering very much to the nose, which is extended, cylindric, and flexile: eyes contiguous; irids yellow, with a longitudinal black stripe through the middle; mouth naked before, (that is to say, the lips not reaching to the front of the mouth) furnished with broad, revolute opposite lips; neck very long; legs large; feet five-toed, palmate, the web extending along the hinder side of each leg as far as the first joint, that on the fore legs furnished with two processes like false toes, on the hind legs with one; fore legs with three broad and sharp scales on the upper and anterior, and two oblong tubercles on the posterior edge. Tail thick, short, not extending beyond the shell; vent on the tail, not more than half an inch from its point.

Length of the shell two feet; breadth one foot and a half; length of the head and neck, seventeen inches.

The young ones are nearly round, paler coloured, and generally marked on the back with subocellate spots of dusky.

Inhabit in the rivers of Georgia and Florida, and although not found in any of the streams which empty immediately into the Atlantic ocean to the northward of Savannah, they abound in all those which run into the Mississippi. The fact of two

young individuals having been taken in the Hudson, does not authorise us in saying that they inhabit there, although they are numerous in the Mohawk, and in all the lakes both above and below the cataract of Niagara. I know not from what circumstance the name of *ferox* has been taken, as they are not more inclined to bite than most other species of tortoise. Of all animals of the family of Chelonides, they furnish the most delicious and nourishing food. They are sometimes caught with the hook, but more frequently are speared or shot.

## 2. TRIONYX MUTICUS.

Testa cartilaginea, ovalis, integerrima, interdum ad medium dorsi depressa; glaberrima, antice nuda, sive ad marginem non tuberculata: os labiatum, antice nudum, labiis revolutis oppositis: pedes antici squamis tribus latis et acutis supra et antice, et duobus tuberculis oblongis postice instructi: pedes postici squama unica infra et postice: cauda brevis.

Le Sueur, Mémoires du Museum d'histoire Naturelle ann. 8. fascicul. 4, p. 267

This species, which was first noticed by M. Le Sueur, inhabits the north-western lakes and the western rivers along with the preceding: I cannot, however, as yet consider it perfectly distinct. The only real difference between the two consists in the perfectly smooth shell of this; I have examined eight different individuals of various sizes, which all agreed in this respect. I cannot, however, admit of two other characteristics pointed out by M. Le Sueur—first, that the margin of the shell is confounded with the neck when this is extended; the same is the case with regard to the *T. ferox*, the only distinction being the projecting tubercles in front; secondly, he



states that there is a longitudinal depression along the back.— This I could perceive in but one specimen, which indeed was the largest of all that fell under my inspection, being ten inches in length, and in this the depression was not more than three inches long, and might not have been visible had the animal been alive. The shell appears to be less varied and mixed with dusky than in the *T. ferox*, but this may be the result of youth. Upon the whole, I think it better to be cautious in admitting unrestrictedly this species, until future researches shall have shown to us one which has reached what may be considered the full size. All animals vary with age, and no description can be considered as correct unless taken from a perfect and full formed animal. The young of the other species differ almost as much from the old ones as this does.

### 3. *TRIONYX BARTRAMI.*

*Caput collumque appendiculis tuberculiformibus, retractilibus, instructa.*

In Bartram's Travels is the figure and description of another species of this genus, which he found in St. John's River of East Florida: the preceding specific character has been selected from them. The peculiar appendages on the head and neck render it perfectly distinct from every other species. He, however, represents his animal, with five claws on each foot. Now, although it is not impossible that this may be the case, for it does not follow that every species of this genus must have but three claws on each, any more than that the hard-shelled tortoises should have five before and four behind, (which, by the by, is not always the case,) yet, as the circumstance has been called in question by writers, this characteristic has been omitted in the description. Mr. Bartram was but little of a

naturalist, and very frequently incorrect in his observations. He may be erroneous here, and I think his figure evidently shows that the specimen from which it was taken was not in a very recent state ; the feet, therefore, may have been shrunk and drawn up, and some of their parts portrayed from memory, which in this case may have been treacherous. In the meantime it becomes our duty to search diligently for this animal, and to remove the obscurity which hangs over it.

## II. TESTUDO.

### 1. TESTUDO CAROLINA.

Testa valde convexa, dorso plana, fuscescenti-flavida, saturatiore nebulata, scutis marginalibus posterioribus depresso-incurvis, duobus postremis coadunatis ; sternum anterius porrectum, posterius profunde emarginatum : caput genæque squamis oblecta : cauda brevissima.

*Testudo Polyphemus*, Daudin. *T. Tabulata*, Schoepff. 56, t. xiii. a young one. \* Mungôfa, vulg.

Shell very convex, flat on the top, bent inwards behind, and entire, brownish yellow, somewhat clouded with darker ; the plates, particularly the lateral and marginal ones, marked with

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\* The letter ô in this word has the sound of the French ou, or the English oo.



concentric striae ; first vertebral plate pentagonal, the acute angle anterior, the rest hexagonal ; first lateral plate triangularly four-sided, the rest oblong, nearly rectangular ; the superior faces more or less angled ; intermediate marginal plate small, oblong, the first unequally five-sided, the second oblong, the rest oblong or square, more or less angled on the superior face, the last on each side, that is to say, the two which are situated over the tail united into one. Sternum yellow, deeply emarginate behind, almost bifurcate ; scapular plates four-sided, projecting forwards so as to form a spade-shaped process, which is rectangular in front, but oblique behind ; brachial plates nearly square, oblique in front, so as to receive the angle formed by the posterior faces of the scapular plates ; pectoral plates oblong, narrow, five-sided ; abdominal plates four-sided, with a projection on the lower side near the outer face, the rest four-sided : sides of the shell rounded in such a manner as to render the marginal plates beneath scarcely distinct ; the wings, likewise, are not distinguishable from the pectoral and abdominal plates ; their anterior supplemental plate is oblong, and very narrow ; the posterior triangular. Skin dusky cinereous ; top of the head and cheeks scaly, the scales darker coloured ; neck granulate, speckled with dusky ; chin with a round wart on each side ; jaws finely serrate, the lower yellowish, the upper one the colour of the skin ; legs and tail scaly, fore legs very large, clavate, spotted beneath and behind with yellow, and furnished behind with a spur pointing backwards ; hind legs of one colour, furnished with a spur like the fore legs, above which are two large, horny, contiguous scales ; feet five-toed ; toes very short, indistinct, claws 5-4 : tail very short and thick.

Plates of the margin twenty-three ; of the sternum twelve.

Length thirteen inches and a half ; height five inches and three-quarters ; length of the spade-form process in front of the sternum two inches.

Inhabit the pine forests of Georgia and Florida, and are never found north of Savannah river. Dig large and deep

holes in the earth, with a considerable hillock at the mouth.— They rarely venture out, except at night; their food is chiefly vegetable, and they commit great depredations in the fields of sweet potatoes, and in gardens when they can effect an entrance. Their strength is prodigious; one will easily walk with a man upon his back, and it has been said that they can support a weight of six hundred pounds. It is not difficult to tame them, and children will sometimes after rendering them docile, harness them to small wagons, and make them draw them about. The flesh is eatable, and they are often sold in the markets.

I have little doubt that this is the original *Testudo Carolina* of Linnæus. His description is—"pedibus digitatis, testa gibba, cauda nulla," (Linn. Sys. Nat. Edit. xii. p. 361.) From so short and imperfect a notice, it is difficult to draw any certain conclusion, and his quotation from Gronovius of "testudo pedibus digitatis, calloso-squamosis, testa ovali subconvexa, scutellis planis striatis, medio punctatis," is as inapplicable to this species as to the *Emys clausa*, which by most authors is considered as synonymous with Linnæus's *T. Carolina*, and seems to me rather to suit the *T. Muhlenbergii* of Schoepff.— But he likewise quotes Seba's Thesaurus, I. tab. LXX. fig. 1. for a representation of his animal, where is found a very large species, said to come from Curassoa, which, as far as a judgment can be formed from the extremely ill executed plates of that heavy work, very much resembles the Mungôfa. As for the country it is said to come from, nothing can be drawn from this against our position, for Seba is very inaccurate in noting the native countries of the animals which he possessed. But Gmelin, in his detailed description, certainly had before him this tortoise, for he says, "caput subobtusum squamis callosis obtectum, scuti incisura anterior lunata, margo acutus, scutella lata, plana, margine striata, medio excavato-punctata; sternum antè truncatum, posterius bifidum:" the scaly head, which is peculiar to this species, and the shape of the sternum, for-

bid its being considered as any other. I have, therefore, restored to it what I consider the original Linnæan denomination. Although the name is not unobjectionable, yet any thing is preferable to the ridiculous appellation of *Polyphemus*.

The young ones have a prominent boss in the centre of each of the plates, which are also deeply marked with concentric striæ: from one of these Schoepff has made his *T. tabulata*.

## 2. *TESTUDO FLORIDANA*, L. C.

Testa ovalis, ecarinata, longitudinaliter rugosa, fusco-nigra lineis irregularibus flavis notata, lateralibus plus minus radiantibus; scutellum intermedium marginale triangulare, integerimum; maxilla inferior edentula.

Shell gibbous, oval, slightly emarginate behind, ecarinate, longitudinally rugous, dark brown, with numerous irregular lines of yellow, those on the lateral plates more or less radiating. First vertebral plate seven-sided, urceolate, the smallest side anterior, the posterior angle a little re-entering; the second and third oblong, four-sided, angled on the sides; fourth five-sided; fifth triangularly seven-sided: lateral plates large, the first triangular, the rest oblong; intermediate marginal plate triangular, wider behind, the first five-sided, the rest oblong or square. Sternum yellow, emarginate behind, scapular plates triangular, a little projecting at the exterior and anterior angle; brachial plates triangular, with the apices truncate; pectoral, abdominal, femoral, and caudal, oblong, four-sided; marginal plates beneath yellow, with each a large black spot, including a yellow one. Skin dusky, head and neck striped with yellow, chin and throat paler, nearly cinereous; a broad yellow stripe commences at the point of the former and bifurcates a

short distance from its origin, including in the bifurcation a narrower one of the same colour; aside of this bifurcated line is another narrow one, and outside of that another, which bifurcates forwards at the angle of the mouth, one branch running along the lower jaw, and the other upwards towards the eye. Eyes yellow, with a broad, black stripe through the middle. Legs and tail scaly, striped with yellow; tail very short. Feet palmate, five-toed; claws, 5-4.

Plates of the margin twenty-five; of the sternum twelve.

Length, one foot three inches; height, seven inches and a half.

Inhabits in St. John's river of East Florida, and has been confounded by Mr. Say with the next.

### 3. TESTUDO RUBRIVENTRIS, L. C.

Testa ovalis, posterius dilatata, ecarinata, longitudinaliter rugosa, fusco-nigra, lineis irregularibus, latis, perpendicularibus, maculisque confluentibus rubris notata: scutellum intermedium marginale, lineare, serratum, dentibus parvis quinque vel sex; maxilla inferior dentata.

*Emys serrata*, Say, Journ. of the Acad. Nat. Scien. Phil. Vol. IV. part. 2. Red-bellied Tarapin, vulg.

Shell moderately gibbous, oval, wider and emarginate behind, ecarinate, longitudinally rugous, dusky, varied with confluent spots, and broad irregular lines of red, or red varied in the same manner with dusky. First vertebral plate narrower than the rest, urceolate, six-sided; the three next six-sided; the fifth seven-sided: lateral plates large, the first nearly triangular, the rest subrhomboidal, with their inferior sides a little angled:

intermediate marginal plate narrow, linear, finely serrate before, with five or six small teeth, the rest all entire, oblong or square, the ninth, tenth, and eleventh each projecting on its posterior exterior angle beyond the succeeding one; those above the hind legs larger than the rest, and spreading. Sternum emarginate behind, and with the marginal plates beneath red, varied, and spotted with dusky, the colors on the latter more distinct: scapular plates triangular, projecting a little beyond the others at the exterior and anterior angle: brachial plates triangular, with the apices truncate; caudal plates triangular, with the posterior angles rounded, the rest quadrangular; the femoral projecting at their posterior and exterior angle beyond the caudal. Skin black; head and sides of the neck with some obscure lines of yellow; throat with four lines of red or yellow, one on each side lateral, the next commencing at the chin and bifurcating a short distance from its origin, the fourth commencing in the middle of the bifurcation and running along the middle of the throat. Lower jaw toothed, the middle tooth the longest and largest, upper jaw hooked at the tip and emarginate, as if to receive the middle tooth of the lower jaw. Eyes yellow, with a broad, black stripe through the middle. Legs and tail scaly, striped and spotted with red: feet palmate, five-toed; claws 5-4.

Plates of the margin, twenty-five; of the sternum, twelve.

Length eleven inches, height four inches.

Inhabit in rivers from New-Jersey to Virginia, chiefly, I believe, in such as are rocky; in the Delaware, near Trenton, they are very numerous. This species has been described by Mr. Say as the *Emys serrata*, to which it has no resemblance, none of the marginal plates being serrate, and the back being destitute of a keel. Is eaten, and considered as tolerably good.



## 4. TESTUDO RETICULATA.

Testa ovalis, posterius dilatata, ecarinata, longitudinaliter rugosa, fusco-nigra, lineis brevibus flavis reticulata, collum prælongum caputque flavo-lineata.

*Emys reticulata*, Merrem. Yellow-bellied Tarapin, vulg.

Shell moderately gibbous, oval, wider and subemarginate behind, ecarinate, longitudinally rugous, dusky or dark brown reticulate with short yellow lines, which form spaces in some degree shaped like the plates; a line of the same colour extends along the middle of the back. First vertebral plate almost pentagonal, broader on the forepart; the second hexagonal, with sometimes a double sinus on its anterior face, but oftener without; the third hexagonal, a little re-entering on its posterior side; the fourth hexagonal, broader, and rounded on its anterior face, so as to enter the sinus of the third, narrower and sometimes emarginate behind; the fifth heptagonal, rounded on its two posterior sides: lateral plates large, subrhomboidal, the first with the sides antiparallel, the two next a little angled on their superior faces: intermediate marginal plate narrow, oblong, entire, the rest nearly square; those above the hind legs broader, and spreading, all of them with a yellow perpendicular line through the middle. Sternum emarginate behind, very smooth, and with the marginal plates beneath yellow, the latter (except those anterior to the brachial plates) sometimes with each a large black spot placed at the junction; a broad black bar also sometimes extends along the wings (frequently two only of the marginal plates on each side have a black spot and the hinder part of the wings another—sometimes again the wings are marked with a broad black bar, and there are no



spots,) scapular plates triangular, extending beyond the others, with a small projection at the exterior angle directed forwards; caudal plates triangular, with the posterior side rounded, the rest quadrangular. Skin dark brown or dusky, neck very long; head and neck above, with numerous longitudinal stripes of yellow, four of them extending the whole length of the neck, and very distinct; the rest, except a very short one in the middle between the eyes, rather indistinct; cheeks striped in the same manner with a bright yellow line reaching from the top of the eye to the tympanum, and another broader one from the bottom of the eye dilated at its extremity, and turning towards the throat; jaws, chin, and throat yellow; jaws striped with dusky, chin with transverse waving lines of the same, throat striped with brighter yellow; eyes yellow, with a broad black stripe through the middle. Legs and tail scaly; fore legs dusky, yellow on the inner half, and sometimes striped with yellow; hind legs and tail, beneath yellow, the latter striped above with the same. Feet palmate, five-toed; claws 5-4.

Plates of the margin twenty-five; of the sternum twelve.

Length of the shell eight inches, height three inches and a half: length of the head and neck, four inches.

Inhabits in ponds of the southern states, whence it was first brought to the notice of naturalists by the late Mr. Bosc. It has not been observed further north than Fayetteville, in North Carolina. It is most remarkable for the extraordinary length of its neck, which when protruded from the water, exactly resembles the upper extremity of a serpent. Flesh very good.

## 5. TESTUDO SERRATA.

Testa gibba, subrotunda, carinata, longitudinaliter rugosa, fusco-nigra, lineis irregularibus subradiatis flavis ; scutellum intermedium marginale angustum, lineare, subsemicylindricum, porrectum, genæ macula magna flava ; scutella marginalia posteriora serrata.

*Emys serrata*, Merrem. Yellow-bellied Tarapin, vulg.

Shell gibbous, oval, almost round, scarcely wider behind than before, emarginate behind, carinate, longitudinally rugous, brownish-dusky marked with irregular lines of yellowish, those on the lateral plates subradiating. First vertebral plate urceolate, much wider behind than before, the second, third and fourth six-sided, the fifth seven-sided, resembling a triangle with its apex truncate, and its base cut into four sides ; lateral plates (except the last, which is small and square) large, subrhomboidal, with their superior side a little angled ; intermediate marginal plate, narrow, linear, subsemicylindrical, subacuminate and projecting ; the rest either square or oblong, the first and second projecting beyond the others, and generally two-toothed, the first very deeply, the second slightly, the five posterior plates on each side two-toothed, so that the shell is deeply serrate behind, two marginal plates over the tail rather bent down. Sternum emarginate behind, and with the marginal plates beneath yellow ; the scapular, and brachial, and generally all the marginal plates with each a large, round, or oblong black spot ; scapular plates triangular, extending beyond the others, with a small projection at the outer angle of each directed forwards ; brachial plates triangular, with the apices truncate, the rest quadrangular ; the femoral projecting at the exterior and posterior angle beyond the caudal. Skin

black; top of the head and sides of the neck striped with yellow, the stripes on the former narrow, faint, and curved at their origin, except one extending from the nose to the middle of the cranium, which is straight, broader, and more distinct, and generally connected with another transverse one, which runs across the top of the nose between the eyes; upper jaw a little emarginate, the lower half yellow, the remainder black, with a few faint, indistinct yellow lines; lower jaw and throat black, the latter with three yellow stripes, the intermediate one bifurcating a little from its origin, the others lateral, nearly parallel, each bifurcating upwards to the eye near the joint of the jaw, and joining a large yellow spot on the cheek. Eyes yellow, with a broad black stripe through the middle. Legs and tail scaly; fore legs with three or four yellow stripes on the upper side, and sometimes as many beneath; hind legs beneath yellow, sometimes varied with black, with an abbreviated yellow line on the upper side near the edge; soles of the feet generally black. Tail short, yellow underneath, with a line of the same color on the top, which towards the base is bifurcate. Feet palmate, five-toed; claws 5-4.

Plates of the margin twenty-five; of the sternum twelve.

Length one foot, height six inches.

Inhabits the southern states in rivers and swamps; its most northern range appears to be the southern part of Virginia.—It is more numerous than the *T. reticulata*, but is not so good for food, its flesh being drier and less sapid. We are indebted for the first description of this animal likewise to *M. Bosc.*

#### 6. *TESTUDO CONCINNA*, L. C.

*Testa lævissima, glabra, ovalis, ecarinata, fusco-nigra, lineis maculisque flavis plus minus confluentibus, et subreticulatis: collum flavo lineatum, linea laterali antè bifurcata.*

*Emys reticulata*, Say, Journ. Acad. Nat. Sciences, Philad. Vol. IV. Part 2.

Shell oval, smooth, ecarinate, emarginate behind, brownish dusky, varied with differently formed and placed lines of yellow, those on the lateral plates somewhat reticulate, the spaces formed by them frequently filled with short lines of yellow, all of them more or less confluent. First vertebral plate hexagonal, the second, third and fourth likewise hexagonal, the lateral angles projecting out very far; the fourth less oblong than the rest, the fifth heptagonal, much broader behind; the first, second, and third lateral plates five-sided, the fourth quadrangular: marginal plates all marked either with a straight line, or a subquadrangle of yellow; the intermediate one small, oblong, the first projecting a little beyond the second and somewhat pentagonal, the rest more or less square or oblong, the ninth, tenth, and eleventh each projecting on its posterior face beyond the succeeding one. Sternum emarginate behind, and with the marginal plates beneath yellow, each of the latter with a large black spot at the junction; wings with a black longitudinal line confluent with the spots on the marginal plates opposite to them, scapular plates triangular; brachial plates triangular with the apices truncate; the rest more or less oblong or square. Skin black, head and neck striped with orange, the stripe on the side of the neck bifurcate on the fore part, one branch running to the eye the other to the chin, so that the jaw is embraced between them; stripe on the chin bifurcating posteriorly a short distance from its origin, and running along the throat, including a shorter one between its branches; jaws striped with yellow, the upper one slightly emarginate. Eyes yellow, with a broad black stripe through the middle.—Legs and tail scaly; fore legs above striped with yellow, beneath with three transverse and two longitudinal lines of the same; hind legs above obscurely striped with red, beneath irregularly marked with orange or yellow. Tail above striped

with red, beneath with yellow. Feet palmate, five-toed ; claws 5-4.

Plates of the margin twenty-five ; of the sternum twelve.

Length eight inches and a half, height three inches and three quarters.

Inhabits in the rivers of Georgia and Carolina, where the beds are rocky. I have never seen them below Augusta on the Savannah, or Columbia on the Congaree. This species has been confounded by Mr. Say with another to which it bears no resemblance. The *T. reticulata* is rough, while this is smooth ; but were any thing wanting to make it absolutely certain that this author is wrong in his *T. serrata* and *T. reticulata*, it is this—that I have examined the identical specimens which were carried by M. Bosc from this country to France, and from which Daudin drew up his descriptions, and have found them to agree, even in the most minute particulars, with the two species which I have described under those names.

#### 7. TESTUDO GEOGRAPHICA.

Testa ovalis, (disco obovato) emarginata, carinata, lævis, postice serrata, dentibus octo vel decem, olivacea, aut fuscescenti-cinerea, lineis brevibus, pallidioribus, irregularibus, sub-reticulatis notata.

*Emys geographica*, Say, loco citato.

Shell oval, (the disc more or less obovate,) emarginate both before and behind ; more or less carinate, smooth, except a few horizontal striæ on the lateral plates, olive brown indistinctly marked with short, irregularly placed lines of paler brown or yellowish, some of them reticulate ; keel black at the



posterior side of each plate. First vertebral plate hexagonal, slightly and sharply pointed in front, the posterior face curved in form of a prolate cycloid, the second, third and fourth hexagonal, the lateral angles acuminate, the anterior face of the second with a deep sinus receiving the projecting curve of the first plate, the fourth with a deep sinus on its posterior face, the fifth hexagonal, its anterior face curved like the posterior face of the first plate, and entering the sinus of the preceding one : first lateral plate six-sided, second and third pentagonal, the lower faces slightly divided into three, the fourth quadrangular, its lower face divided into two : marginal plates edged outwardly with yellow, the intermediate one triangular, its apex pointing forward, truncate and three-toothed, the first pentagonal, projecting at its posterior and exterior angle beyond the next, the rest square or oblong, the second projecting like the first, the eighth, ninth, tenth and eleventh wider and spreading, each projecting beyond the preceding one, the ninth, tenth, eleventh and twelfth two-toothed, so that the posterior edge of the shell is serrate, with eight teeth. Sternum deeply emarginate behind, and with the lateral plates beneath yellow : scapular plates small, triangular with a small projection at the outer angle directed forwards ; brachial plates triangular with the apices truncate ; pectoral plates narrow, oblong ; abdominal plates large, square ; femoral and caudal plates four-sided, the posterior face of the former and the anterior face of the latter oblique, the former also extends beyond the latter at the inferior and exterior angle ; marginal plates beneath marked with concentric lines of dusky ; wings striped with the same. Skin black : head and neck striped with yellow, the stripes frequently red towards their base, stripe on the top of the head reaching from the point of the nose, abbreviated and more distinct than the others, a large triangular yellow spot behind each eye, chin and throat striped with black and yellowish, the black stripes conduplicate. Legs and tail scaly ; legs striped and varied with yellow, particularly on the fore part ; claws yellow, with a black spot at the base of each :



tail short, striped with yellow. Eyes yellow, with a broad black stripe through the middle. Feet palmate, five-toed: claws 5-4.

Plates of the margin twenty-five; of the sternum twelve.

Length ten inches; height three inches.

*a.* Shell more gibbous, more distinctly carinate, with two remarkable prominent tubercles, on the second and third vertebral plates, smooth, except a few concentric striæ on the lateral plates, and some diverging rugæ on the others: colour cinereous brown with a few irregular marks of paler, the keel and fore-part of the vertebral tubercles more or less black; lateral plates with a dusky spot more or less distinct on the hind part of each; marginal plates outwardly edged with yellow, and with each a dusky spot on the hinder part, where it joins the next. First vertebral plate the smallest and narrowest, much elevated in the middle, somewhat urceolate, pentagonal, the acute angle in front, and very sharp, the second, third and fourth hexagonal, the fifth three-sided, the anterior face curved, the two others posterior and straight; first lateral plate six-sided, second and third five-sided, the fourth quadrangular; intermediate lateral plate small, oblong, wider and deeply emarginate behind, so as to receive the acute and projecting angle of the first vertebral plate, all the rest quadrangular; the exterior and posterior angle of the two first projecting beyond the rest, and each other, the eighth, ninth, tenth, eleventh and twelfth wider and spreading, projecting like the two first, the eighth, ninth and tenth slightly toothed, the eleventh and twelfth very much so, so that the posterior margin of the shell is deeply serrate with eight or ten teeth on each side. Sternum deeply emarginate behind, and with the lateral plates beneath yellow; scapular plates rather small, triangular, with a small projection at the exterior angle directed forwards; brachial plates triangular, with the apices truncate; pectoral plates oblong; abdominal and femoral nearly square, the anterior sides of the latter oblique; caudal plates nearly square; marginal plates beneath

marked with concentric lines of dusky, wings striped with the same. Skin black, top of the head with a straight yellow line reaching from the top of the nose to the middle of the cranium, a parallel shorter one on each side, and another shorter and oblique one, reaching from about the middle of the orbit of each eye to the one on the middle of the head; behind each eye is a curved yellow spot, which becomes a line towards the back part of the head, and joins a straight red line which runs down the back of the neck; upper jaw, cheeks, and neck, striped with yellow, the stripes on the last becoming red as they approach the head; above the hinder part of the upper jaw is a conspicuous yellow spot: lower jaw, chin and throat yellow, all of them striped with black, the stripes on the last in pairs and conduplicate. Legs and tail scaly, striped with yellow: claws yellow, with a black spot at the base of each.

Length six inches, height two inches.

A younger one was more gibbous; the first vertebral plate simply pentagonal; shell without any paler marks, except on the marginal plates; lateral plates with concentric striæ.

Inhabits Lake Erie and the western rivers; was first described by M. Le Sueur in the *Mémoires du Museum d'Histoire naturelle* Ann. 8 fasc. iv. p. 267—268. He seems to consider the variety  $\alpha$  as his *T. geographica*, and the other variety as a distinct species; yet the figure in the *Journal of the Academy of Natural Sciences of Philadelphia*, agrees better with this latter; neither of them, however, has the tail annulate with yellow. There are not sufficient differences between the two to constitute them separate species: I have examined a considerable number of both, but never found one that was ecarinate.

## I. TESTUDO INSCULPTA, L. C.

Testa ovalis carinata, fusca, lineis flavis striisque radiantibus, quæ striis concentricis intersecantur.

*Emys scabra*, Say, loco citato.

Shell oval, carinate, emarginate behind, all the plates with radiating lines of yellow and deeply radiating striæ, which are cut by other concentric striæ. First vertebral plate pentagonal, the second and third subhexagonal, the fourth heptagonal, very narrow behind, the fifth hexagonal, four of its faces anterior: first lateral plate heptagonal, the second and third quadrangular, the superior faces rather angled, the latter somewhat three-sided on the lower face, the fourth hexagonal: intermediate marginal plate small, oblong linear, the first pentagonal, projecting a little beyond the next, the rest more or less square or oblong, the ninth, tenth and eleventh each projecting beyond the preceding one, and sometimes revolute.—Sternum emarginate behind, and with the marginal plates beneath yellow, all the plates marked with a large black spot and with concentric striæ; scapular plates triangular, projecting beyond the brachial at the exterior angle; the rest quadrangular; the femoral projecting beyond the caudal at the exterior and posterior angle. Skin black: fore part of the throat speckled with red, hind part red speckled with black, a line which is yellow on the fore part and red on the hind, or altogether red or yellow, commences at the point of the chin, and runs along each side of the throat: jaws horn colour, the upper one emarginate, the lower with a few brownish spots: irids dark brown, pupil black, surrounded by a yellow ring.—Legs and tail scaly; feet palmate, five-toed; claws 5-4.

Plates of the margin twenty-five; of the sternum twelve.

Length eight inches, height two inches and three-quarters.

Inhabits the northern states in rivers and ponds: is fonder of leaving the water than any other aquatic species, and will remain uninjured in a dry place for some months.

Mr. Say has erroneously supposed that this is the *Testudo scabra* of Linnæus: without entering into the consideration of a question which has been so often discussed, and which has long ago been determined by M. Latreille, I shall merely observe, that every thing combines to prove Mr. Say mistaken. The reader is referred to what has been written on this subject by MM. Latreille and Daudin in their respective works.

#### 9. *TESTUDO PALUSTRIS.*

Testa ovalis, depressa, carinata, nigra vel fusca, pallidiore indistincte variata, striisque numerosis concentricis impressa: vel lævis, grisea, lineis concentricis nigris in utroque scuto.

*Testudo centrata*, Daudin. *T. Terrapin*, Schœpff. *Emys centrata*, Merrem. Salt-water Tarapin of the southern states.

Shell depressed, oval, carinate, emarginate behind, above dusky or brown, indistinctly varied with paler, all the plates marked with concentric striæ. First vertebral plate four-sided, the anterior face a little curved; or pentagonal, the second, third, fourth and fifth hexagonal, the three posterior faces of the last much smaller than the others; lateral plates large, more or less hexagonal, the second and third pentagonal, the fourth tetragonal, the sides antiparallel; or sometimes pentagonal; intermediate marginal plate oblong, rectangular, or triangular, with the apex truncate, the rest nearly quadrangular,

some of them rather inclining to the pentagonal form, those near the tail sometimes a little revolute. Chest emarginate behind, yellow, the plates marked with concentric striæ, and slightly varied with concentric lines of dusky, seldom more than two on each plate; scapular plates triangular; brachial plates obliquely four-sided, the exterior lateral face rounded; the rest quadrangular; marginal plates beneath yellow with a duskyish irregularly shaped ring, and frequently a black spot in the centre of each; wings marked in the same manner; supplementary plates frequently wanting. Skin cinereous, spotted with dusky. Irids the color of the skin; pupils black. Legs and tail scaly; feet palmate, five-toed; claws 5-4.

Plates of the margin twenty-five; of the sternum twelve.

Length seven inches, height two inches and three-quarters.

*α.* Smooth, with very few concentric striæ. Shell above gray, with concentric marks of black on each plate. Sternum yellow, spots on the skin larger.

*β.* Dark brown somewhat varied with black; lateral and marginal plates more or less marked with concentric striæ; vertebral plates smooth.

*γ.* With concentric striæ on all the plates, and black concentric marks on some of them.

It is unaccountable how this species has lost the very appropriate name given to it by Linnæus, when there could have been no doubt respecting it. It is found from New-York to Florida, and even in the West Indies, in salt water and always in the neighbourhood of marshes. As an article of food it is much preferred to every other species, particularly when dug out of the marshes in a torpid state; immense numbers of them are annually brought to market. The males are smaller, and have the concentric striæ more deeply impressed than the



females. The trivial name terrapin, which Schœpff has affixed to this species, is by no means appropriate, as the word is a generic term among us, and signifies land or fresh water tortoises as distinguished from marine, which it is well known are ridiculously enough called turtles.

## 10. TESTUDO PICTA.

Testa oblongo-ovalis, lævissima, scutis antice fuscescenti-flavo marginatis; scutellis marginalibus flavo vel rubro pictis.

*Testudo cinerea*, Schœpff, tab. iii. fig. 3, is a young one.—*Testudo novæ hispaniæ lusitanis ragado d'aqua appellata*, Seba I. tab. lxxx. fig. 5. *Emys picta*, Merrem.

Shell oblong-oval, rather depressed, smooth, with a very small emargination behind, dusky brown, all the dorsal plates bordered with yellowish, or very pale brown, or more generally only the second and third row of dorsal plates edged on the fore part with yellowish; a longitudinal line of the same colour frequently runs along the middle of the back. First vertebral plate nearly quadrangular, wider on the fore part and elongated behind in the middle, so as to enter a sinus in the next; the second hexagonal, the third quadrangular; the fourth hexagonal, narrowed behind; the fifth heptagonal: first lateral plate triangularly-foursided, the superior face the smallest, and with the inferior face generally rounded; the second and third five-sided, the latter sometimes square; intermediate marginal plate emarginate, linear, narrowed before, so as to leave an open space resembling an emargination on each side; the rest oblong or square; the first finely serrate on the anterior face, all of them with a large red or yellow spot in the



middle, surrounded by concentric lines of the same. Sternum yellow, finely serrate before, and with a very small emargination both before and behind; scapular plates triangular, projecting a little beyond the rest; brachial plates triangular, with the apices truncate; caudal plates triangular, the posterior face rounded; the rest quadrangular; pectoral plates narrow. Skin black, an oblong yellow spot behind each eye, and another on the top of the back part of the head; upper jaw, chin and cheeks striped with yellow, throat and sides of the neck with red, being continuations of the yellow stripes on the chin and cheeks. Legs and tail scaly; fore legs with two red stripes on the upper side, and a few irregular spots of the same on the toes and beneath; hind legs with two red stripes on the under side, and some spots of the same above: tail with two yellow stripes above, and two red ones on the sides which unite beneath into one. Eyes yellow, with a broad black stripe through the middle; upper jaw slightly emarginate. Feet palmate five-toed; claws 5-4.

In some individuals the lateral plates are marked with a perpendicular curved yellowish line and sometimes are reticulate with yellow near the inferior face.

Plates of the margin twenty-five, of the sternum twelve.

Length nine inches, height four.

Inhabit only in the northern states from Canada to Virginia in ponds, never in streams of running water. Here they may be seen in great numbers, basking in the sun on rocks or logs, and plunging instantaneously into the water on the approach of any one. They vary much in the intensity of their color, and in the liveliness of the markings on the plates: the young ones, however, are always more brilliant than those which are more advanced. They die in a very few days after being taken from the water.

## 11. TESTUDO PUNCTATA.

Testa ovata, lævis, nigra, flavo punctata.

*Testudo guttata* and *T. anonyma*, Schneider. *T. terrestris amboinensis*, Seba I. tab. lxxx. fig. 7.

Shell ovate, smooth, generally emarginate behind, ecarinate, black spotted with yellow, the vertebral plates with scarcely ever more than one spot, the lateral with from one to nine, the marginal with always one on each. First vertebral plate sub-quadrangular, rather wider before than behind; the three next hexagonal, the fifth heptagonal; all of them nearly equal in size: lateral plates larger, the first nearly triangular, the rest quadrangular: intermediate marginal plate linear, narrow, the rest all oblong or square, the first one projecting beyond the rest at its outer angle. Sternum emarginate behind, yellow, with large dusky blotches on the fore part and sides; or black, with a little red on the sides and middle, the plates marked with concentric striæ; marginal plates beneath yellow, those near the wings generally varied with dusky; scapular plates triangular, extending a little beyond the rest, with a small projection at the exterior angle directed forwards; brachial plates triangular, likewise extending beyond the next at the exterior and posterior angle; pectoral and abdominal plates oblong; femoral plates oblong with their lower faces oblique, projecting beyond the caudal at their exterior and posterior angle; caudal plates triangularly-quadrangular; supplementary plates of the wings unconnected with the wings, and placed on the under side of the fourth and seventh marginal plates. Skin black; head smooth; neck granulate, more or less spotted with yellow; jaws yellow, or dark horn color, or reddish brown, the upper one emarginate. Legs and tail scaly, the fore legs be-

fore red varied with black, behind black spotted with red or yellow ; hind legs before black spotted with red and yellow, behind red a little varied with black ; tail with a few yellow spots, region of the anus red. Eyes black, irids surrounded by a red circle. Feet palmate, five-toed ; claws 5-4.

$\alpha$ . Depressed ; very little convex, wider behind, marginal plates above the hind legs very spreading : head with a few yellow spots, neck with many, particularly on the under side.

Length four inches and a half, height one inch and three-eighths.

$\beta$ . More convex ; spots on the shell large, marginal plates beneath sometimes reddish, those over the hind legs not spreading. Sternum black, a little red on the middle and edges ; sometimes the jaws, fore part of the throat, and a line running from the lower jaw along the side of the neck, orange.

Length four inches and one eighth, height one inch and three quarters.

$\gamma$ . Convex like the last ; shell not emarginate behind, with fewer spots, rarely any on the lateral plates ; plates of the disc with concentric striæ ; marginal plates over the hind legs not spreading, the first one not projecting beyond the rest, all of them beneath very dark brown, varied with yellow. Sternum very dark brown, yellow on the middle and on the sutures of the plates.

Length three inches and three quarters, height one inch and a half.

$\delta$ . Convex like the last ; plates marked with concentric striæ ; and with generally but one spot on each : head with four yellow spots on the top, another at the corner of each eye, and a large one on the side of the hind part of the head extending and growing narrower to the neck.

Length four inches ; height one inch and three quarters.

Inhabits from one end of the United States to the other, in small clear streams, never in ponds or muddy water. The variety  $\alpha$ . differs very much in its appearance from the rest.

## 12. TESTUDO MUHLENBERGII.

Testa oblongo-ovalis, gibbosa, carinata, postice subdilatata lateribus medio contractis, nigrescenti-fusca areolis lineisque subradiantibus, flavis, striisque concentricis in utroque scuto; capitis latera macula magna aurantiaca.

Schœpff. 132, tab. xxxi. *Emys biguttata*, Say, loco citato. *Chersine muhlenbergii*, Merrem.

Shell gibbous, oblong-oval, carinate, a little wider and emarginate behind, rather contracted on the sides near the middle, dusky-brown with yellowish or reddish areolæ and subradiating lines (sometimes very indistinct,) and concentric striæ on each plate, which last in aged ones are only perceptible on the lateral plates. First vertebral plate pentagonal, the second hexagonal the lateral angles rounded, the third and fourth hexagonal, the fifth heptagonal, the upper face rounded; lateral plates, except the last, which is generally smaller, subequal, the first four-sided, the lower face rounded, the second and third pentagonal, the fourth square; intermediate marginal plate linear, very small, the three next large, the four next small, the remainder large and spreading, all of them oblong or square, with one or more reddish spots on each. Sternum deeply emarginate behind, very dark brown, varied with yellow or red, particularly towards the middle; scapular plates triangular, projecting at the exterior angle, the rest quadrangular, the femoral projecting beyond the caudal at the inferior and exterior angle, all of them marked with concentric striæ: supplementary plates

of the wings very small, the posterior one scarcely perceptible. Skin black, cheeks and sides of the back part of the head with a large irregular orange spot extending to the neck : jaws with a few spots of red, the upper one emarginate. Legs and tail scaly, the former varied on the inner side with red ; toes and tail varied on the top with the same ; irids brown. Feet palmate, five-toed ; claws 5-4.

Plates of the margin twenty-five, of the sternum twelve.

Length three inches and a half, height one inch and a quarter.

Inhabits New-Jersey and Pennsylvania in clear streams ; is not very common : the old ones are frequently almost entirely smooth. This species was sent to Schoepff by the Rev. H. Muhlenberg, so deservedly celebrated for his botanical knowledge ; Schoepff, however, very strangely considered it as a variety of the *T. punctata*.

### 13. TESTUDO PENNSYLVANICA.

Testa ovalis, lævis, dorso plana, ecarinata, nigra vel fusca, scutis vertebralibus imbricatis. Sternum ut plurimum antice et postice mobile. Caput magnum, obtusum, maxilla superiore hamata : brachia duabus plicis vel squamis magnis posterioribus ; cauda apice unguolata.

*Testudo lutaria pensylvanica*, Edward's Gleanings, Part II. p. 77. tab. cclxxxvii. *T. tricarinata*, Schœpff, is probably a young one. *Kinosternon pensylvanicum*, Bell, Zool. Journal, No. VII. *Cistudo pensylvanica*, Say, loco citato. *Terrapene pensylvanica*, Merrem. Mud tortoise, Pennant Arctic Zoology, Supplem. p. 80. Mud tarapin of the southern states.



Shell gibbous, flattened on the back, eecarinate, oval, very slightly emarginate behind, dusky or brown of different degrees of intensity. Vertebral plates more or less imbricate behind; the first long, narrower than the rest, resembling a triangle with its apex pointing backwards and truncate, a little elevated along the middle; second, third and fourth hexagonal, the anterior angles rounded, the lateral acuminate, the fifth triangularly-pentagonal; lateral plates large, pentagonal, except the first which is quadrangular; marginal plates small, forming a narrow border around the shell, which is separated from the lateral plates by a deep groove as far as the tenth, the tenth and eleventh wider than the rest, continuous with the last lateral and vertebral plates, being only distinguished from them by the sutures; intermediate marginal plate square, the rest oblong. Sternum emarginate behind, jointed at the pectoral plates, and sometimes also imperfectly at the posterior face of the abdominal, yellow (of which colour likewise is the under side of the marginal plates), each plate with a dark brown border where it joins the next; scapular plate single, triangular; abdominal plates foursided, the rest triangular; supplementary plates of the wings triangular, interposed between the wings and the marginal plates, the posterior one very large. Skin dusky cinereous, inclining to brown, head blunt, large, and with the upper side of the neck, spotted with pale brown; jaws, sides of the neck, throat and chin more inclining to cinereous; upper jaw with a hooked tooth; chin with two warts. Legs naked, fore legs with two folds or large scales on the hinder side, and a few small scales beneath at the insertion of the feet; hind legs with eight or ten scales beneath. Irids dark brown: tail naked, short, furnished at the tip with a blunt nail. Feet palmate, five-toed; claws 5-4.

Plates of the margin twenty-three, of the sternum eleven.

Length four inches, height one inch and three quarters.

Inhabits from New-Jersey to Florida in ditches and muddy streams: has a strong and not disagreeable odour of musk. Preys upon small fish and other aquatic animals, bites readily



at the hook, and is therefore very troublesome to anglers; it takes hold of the bait very gently and draws it slowly to the bottom of the water, and is frequently several minutes before it seizes it in such a manner as to allow of its being taken.

#### 14. TESTUDO ODORATA.

Testa lævis, gibba, plus minus carinata, sæpe dorso plana, nigra, scutis vertebralibus imbricatis. Sternum sæpius antice mobile; postice profundissime emarginatum; scuto scapulare parvo. Caput subacuminatum: brachia tribus plicis vel squamis magnis anterioribus; cauda simplici.

*Testudo glutinata*, Daudin, and *T. pensylvanica sterno immobili*, Schoepff. 110. tab. xxiv. fig. B. are the same. *Cistudo odorata*, Say, loco citato. *Sternothærus odoratus* and *Boscii* Bell, Zool. Journ. No. VII. *Kinosternon shavianum*, ejusd. ibid. *Terrapene odorata* and *Boscii*, Merrem. Mud tarapin of the southern states.

Shell gibbous, more or less carinate, oblong-oval, generally not emarginate behind, black or dusky, mixed and clouded with brown, sometimes with a few radiating lines of the latter colour on the lateral plates. Vertebral plates imbricate behind, the first long, narrow, and triangular, with the apex pointing backwards, and truncate, the second, third, and fourth hexagonal, the anterior angles rounded, the lateral acuminate, the fifth triangularly-pentagonal; lateral plates large, pentagonal, except the first which is four-sided, with the lower face rounded; intermediate marginal plate small, subtriangular, the rest oblong, forming a narrow border which is separated from the lateral plates by a deep groove as far as the tenth; the tenth and eleventh wider than the rest, continuous with the last late-

ral and vertebral plates, being only distinguished from them by the sutures. Sternum small, narrow, very deeply emarginate behind, sometimes imperfectly jointed at the pectoral plates, dirty yellowish, each plate often bordered with dusky; scapular plate single, very small, subtriangular, irregular in shape; brachial plates projecting beyond the pectoral at the exterior and posterior angle, small, irregular, sometimes triangular, sometimes four-sided, frequently one of them triangular, the other four-sided; the abdominal the largest, the femoral approaching to a triangular form; supplementary plates of the wings irregular, interposed between the wings and the marginal plates, the posterior the largest. Skin dusky, head rather pointed, jaws inclining to yellow, an interrupted yellow line proceeds from the nose above the eye along the side of the neck, and another similar one from the bottom of the eye towards the throat; throat and sides of the neck granulate or papillous; chin furnished with several small warts. Legs naked; forelegs with three folds or large scales on the fore part, and somewhat granulate, sometimes with a few small scales beneath at the insertion of the feet; hind legs granulate beneath and with a few small scales at the base of the feet. Eyes black, pupil surrounded by a yellow ring. Tail naked, simple, furnished above with numerous pointed warts, which are somewhat disposed in rows. Feet palmate, five-toed; claws 5-4.

Plates of the margin, twenty-three; of the sternum, eleven.

Length three inches and a half, height one inch and a half.

*α.* Shell dark brown, very convex and sharp on the back, with a conspicuous keel; plates marked with radiating lines of dusky, and with concentric striæ.

*β.* Shell flattened along the middle of the back, so as to resemble the *T. pensylvanica*.

In old individuals the joint in the sternum becomes obsolete.

Inhabits with the last, which it entirely resembles in habits and odour. The synonyms quoted to this species show more plainly the absurdity of the proposed divisions of the tortoise family than any thing which I can say. I therefore omit the considerations which would obviously present themselves to the mind, and leave every one to draw his own conclusions.

### 15. TESTUDO CLAUSA.

Rotunda, gibbosissima : testa carinata, ut plurimum, nigra, vel fusca, flavo-variegata. Sternum ad testam membrana junctum, bivalve, valvis antice et postice singulatim cludentibus, et testam arcte obserantibus.

*Testudo caroliniana*, Schneider 33. No. 7. *T. virginea*, Grew Mus. tab. iii. fig. 2. *T. Carolina* of most authors. *T. virgulata*, Daudin, is the same. *Cistudo clausa*, Say, loco citato. *Terrapene clausa*, Merrem. *Terrapene carolina*, *T. maculata*, *T. bicolor*, *T. subulosa*, Bell Zool. Journ. No. VII. are the same. *Chequered tortoise*, Pennant Arctic Zool. Sup. 79. Land turtle of the northern states ; Pine-barren tarapin of the southern.

Shell round or oval, very gibbous, almost hemispherical, carinate, entire, dusky or brownish yellow, with spots or stripes of yellow or greenish, the stripes disposed in radii ; and conversely ; most generally also with concentric striæ. First vertebral plate pentagonal, urceolate, second, third and fourth hexagonal, all of them more or less angled on their anterior

faces, fifth pentagonal ; first lateral plate four-sided, narrower on the upper face, and curved on the lower, second oblong-pentagonal, third and fourth four-sided, the latter narrower above, the two superior angles nearly obliterated ; intermediate marginal plate very small, linear or oblong, generally projecting beyond the others, the rest quadrangular, some of them approaching to the pentagonal form, the ninth, tenth and eleventh frequently revolute. Sternum entire, joined to the shell by a membrane, bivalve, both the valves moving on the same axis, smooth, yellow, dusky, or dark brown, or mixed yellow and dusky, or dark brown spotted with yellow ; scapular and brachial plates triangular, the latter with their apices truncate ; pectoral and abdominal oblong, rectangular ; femoral and caudal triangular, the former with the apices truncate. Head and neck varied, or striped, or spotted with black, or dusky, or brown, and yellow or red ; throat black, or yellowish cinereous, or dusky, with a few red or yellow spots, or striped with yellow. Legs and tail scaly, dusky or cinereous, fore legs spotted with yellow, particularly above, hind legs with a few spots of red or yellow on the hind part and beneath, or entirely yellow beneath ; tail short, with a few yellow spots on the top. Upper jaw generally emarginate ; irids red or yellow. Feet palmate, five-toed ; claws, 5-4.

Plates of the margin twenty-five ; of the sternum twelve.

Length, six inches ; height, two inches and a half.

*α.* Very dark brown, obscurely spotted with yellow, with a few radiating lines of the same : sternum very dark brown with a few blotches of yellow : top of the head yellow ; jaws varied with yellow and black ; neck yellowish-cinereous spotted with yellow.

*β.* With larger and more distinct spots of yellow, some of them confluent and subradiating. Sternum yellow : jaws yellow striped with black, top of the head mostly yellow :

sides of the neck black, striped with yellow; throat yellow, varied with black.

γ. Shell brown, the plates marked with concentric striæ, and with numerous round and oblong spots of yellow; keel yellow: sternum yellow unspotted: head and neck black, spotted above, and varied on the sides with orange; chin and throat yellow; jaws yellow, the upper one slightly marked with brown. This is the *Testudo virgulata* of Daudin, and the description was made from the very specimen he possessed, compared with three others.

δ. Smooth, yellowish brown, with a few indistinct spots of dark brown: sternum yellow, unspotted: skin cinereous brown, fore legs darker, top of the head yellowish; jaws orange, the lower one marked with one or two dusky spots, sometimes unspotted; chin and throat yellowish, rarely marked with a few spots of dusky; hind legs and tail unspotted.

ε. Shell and sternum entirely very dark brown, without spots: plates deeply marked with concentric striæ.

Inhabits from Hudson's Bay to Florida, always in dry situations; in the northern states in hilly woods, and in the southern in pine forests. Naturalists who wish to bound and circumscribe nature within the narrow limits of their own systems and hypotheses, have striven hard to make this species not an exclusive inhabitant of the land; but it is as decidedly a land tortoise as any that exists: indeed the shape of its shell would render the water a very improper place for its habitation, nor would it probably feel much at home were it forced to seek its food along with its numerous congeners in ponds or rivers.

The shell is so hard and the animal so strong that it can



easily walk with a weight of sixty pounds on its back. Its food consists of fruit, insects, and the edible fungi, particularly the different species of clavaria. Many persons are in the habit of keeping them in their cellars, where they destroy snails, crickets, and other noxious insects; it may however be questioned whether they ever attempt, as has been said, to devour rats and mice; they are not well formed for the pursuit of such active animals, who have too much sense to suffer themselves to be caught by so sluggish a hunter. The same may be said of the ridiculous stories of their catching and destroying snakes. This species has been cited as an example of longevity among animals of the lower classes: all tortoises are long-lived; but the finding of an individual with a name and date engraven on its sternum proves nothing: the idle and the foolish are fond of inscribing their names every where, and may as well antedate the time by half a century, as state the true year of their attempts at immortality.

#### 16. TESTUDO SERPENTINA.

Testa ovalis, plus minus carinata, postice utrinque tridentata: sternum parvum, angustum, rhombiforme: caput magnum. mandibula superiore hamata; cauda magna, longa, cristata.

*Chelonura serpentina*, Say, loco cit. *Emys serpentina*, Merrem. *Serrated tortoise*, Pennant Arct. Zool. Supp. No. 6. Alligator tarapin of the southern states; loggerhead or snapping turtle of the northern.

Shell oval, rather depressed, more or less carinate, emarginate behind, above dusky or dark cinereous. First vertebral plate pentagonal, wider in front, the lateral faces rounded, the

second, third and fourth quadrangular, or slightly hexagonal, the fifth pentagonal: lateral plates marked near the base with concentric striæ, the first triangular with its apex truncate, and lower face rounded, the rest quadrangular with their lower faces slightly curved, the upper faces not angled; marginal plates oblong, the posterior ones widened, the intermediate very narrow, the tenth, eleventh, and twelfth projecting beyond each other so as to form three obtuse teeth on each side. Sternum small, narrow, lozenge-shaped, pointed and entire at both ends, and with the marginal plates beneath yellowish, wings narrow, five or six-sided, supplementary plates triangular, interposed between the wings and the marginal plates of the shell; scapular plates small, triangular; brachial plates triangular, their apices rounded; pectoral five-sided, the exterior posterior side small; abdominal plates wanting; femoral sub-quadrangular; caudal narrow, triangular. Head, neck, and limbs very large: skin above granulate, dusky, beneath warty, cinereous, or dirty white, or yellowish. Eyes brown, with a black line through the middle; jaws hooked, varied with yellowish brown and dusky, top of the head scaly; chin with two prominent warts: fore legs with five rows of sharp and broad scales, those on the hinder edge the largest; hind legs with six or seven large and broad scales beneath; tail scaly, very long, crested with six or seven prominences; claws 5-4.

Plates of the margin twenty-five; of the sternum ten.

Length of the shell twelve inches, height four inches and a half.

Length of the tail eight inches and four-fifths.

The young ones have the concentric lines on the plates more distinct: the vertebral and lateral plates are each furnished with an obtuse projection, so that the shell is tricarinate, these projections are marked with raised lines which radiate forwards, and on the lateral plates are wider and more prominent.

Inhabits from New-England to Florida in rivers, and seems to prefer muddy and impure water to that which is clear. It has also been sent to the Lyceum from Lake Superior by Mr. Schoolcraft. This species is very voracious in its habits and destroys great quantities of fish; it is also more ferocious than any other, and will seize with violence any thing presented to it, nor let go its hold even when the head is separated from the body: the wound inflicted by its bite is very severe. It is much sought after as an article of food, but when old the flesh is apt to be rank and disagreeable, at all times it possesses a strong musky odour; from which circumstance, as well as from its long and crested tail, it has received in the southern parts of our country the name of alligator tarapin.

The French naturalists appear to have described two species resembling this, the one, *T. lacertina*, answers exactly to our *serpentina*, and the other, which they term *T. serpentina*, seems to be the same animal in a less advanced stage, the chief difference between the two, consisting in three rows of prominences on the shell.

With respect to the *Testudo denticulata*, said to be an inhabitant of this country, if the figure published by Shaw is a correct representation of it, no one I think can hesitate to pronounce it an imposition. Nature is consistent with herself; and whatever supposed aberrations may be observed in any of her works, we never see such an outrageous monstrosity as is exhibited in this supposititious species.

Thus it is to be hoped that I have reduced to some certainty all the species of land and fresh water tortoises that have fallen under my observation. Many remain to be discovered by some more fortunate naturalist. The extensive regions of the west have yet to be explored, and even the rivers of the

northern states have not been sufficiently examined. What are the large tortoises to be seen at all times in the Mohawk river, and what were those observed by Major Long's party in the tributary streams of the Missouri, and which at hazard are stated to have been the *geographica*? Time will undoubtedly add to the number already known; I have only offered my humble contribution towards the increase of our knowledge: others may perfect what I have begun.

\* *Alius alia potest invenire; nemo omnia.*—*AVS.*

#### NOTE.

Since writing the foregoing observations, the author has seen the second volume of the new edition of Baron Cuvier's "*Règne Animal*." He wishes it to be distinctly understood, that he is not answerable for the errors and mistatements there introduced, into the account of the tortoises of this country; and he appeals to the names which he gives to the species, and the synonyms which he quotes, as a direct proof that so many contradictions could not have originated with him. Whether he has been misunderstood by M. Cuvier, or whether the names which he furnished have since been accidentally or wilfully changed, it is needless to conjecture. It will be conceived that the author does not wish to enter into a more detailed exposition of the matter, suffice it then to point out what these errors are.\*

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\* See Cuvier, *Reg. An.* n. ed. Vol. II. p. 11, note (2.)

The *Emys reticulata* of Daudin is given to him, when it had appeared under that name many years ago, in the works both of Latreille and Daudin.

*Emys concinna*, L. c. is quoted as synonymous with *E. geometrica* of Le Sueur. It is not easy to discover what is meant by this : if the *E. geographica* was intended, there is very little resemblance between the two species, and M. Le Sueur probably never saw the *concinna*.

*E. concentrica*, is some other person's name for the *palustris*.

*E. pulchella* of Schœpff is totally distinct from the *insculpta* of L. c. In the Museum of the king's garden at Paris is a decapitated specimen of the *insculpta* which is labelled *pulchella*, but it differs entirely from Schœpff's animal, and must have been named by some person but little conversant with this family of reptiles. The *Emys odorata* is likewise attributed to the author, although he never has adopted *Emys* as a genus, and even if he had, would not have placed this animal in it.

Great names frequently give a currency to matters of little importance which otherwise might have passed unnoticed. An individual but little known, and living in a country remote from the scientific capital of the world, might have felt flattered at being noticed by one who is considered as the oracle of natural science, but he would, at the same time, wish not to be misrepresented.