BIOLOGIA
CENTRALI-AMERICANA.

REPTILIA AND BATRACHIA.

BY

1885–1902.
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INTRODUCTION.

More than fifteen years have elapsed since the first sheets of this Volume of the 'Biologia Centrali-Americana' were published. The slow progress of the work was due partly to the demand made upon the author's time by other, chiefly official, duties, and partly to the anticipation of receiving important additions to the material that was then available at the British Museum, and which included the rich collections brought home by Salvin, and later by Godman, from Guatemala and Mexico. A staff of collectors was at work for the 'Biologia' in various parts of Central America, and they had received instructions from the Editors to pay attention to Reptiles and Batrachians, besides the special branches to which they devoted themselves principally. To wait as long as possible for the result of these instructions seemed to be all the more desirable as the great work of the 'Mission Scientifique au Mexique et dans l'Amérique Centrale,' in which the Herpetology was entrusted to the able hands of M. Bocourt, was in course of publication, and, like the numerous important contributions by the late Mr. Cope, contained a multitude of forms not represented in the English collections.

Of the material received from the above-mentioned sources during the progress of the work I have to refer specially to the following:—from Mr. H. H. Smith, who sent several large collections from Atoyac in Vera Cruz, Teapa in Tabasco, Omilteme and Amula in Guerrero, and Cuernavaca in Morelos; from Hr. A. Forrer, who visited the Tres Marias Islands, and thoroughly searched several localities in Western Mexico, particularly Presidio, near Mazatlan; from Dr. A. C. Butler, who selected some localities on the plateau of Central Mexico as his collecting-grounds; from Hr. C. T. Hoge and Señor M. Trujillo, who sent not a few interesting species from Jalapa and Misantla in Vera Cruz; from Mr. G. F. Gaumer, who collected in Yucatan and Honduras, visiting Cozumel, Bonacca, and Ruatan Islands; from Mr. W. B. Richardson and Hr. Ernst Rothschild, both of whom made valuable collections at Matagalpa in Nicaragua; from
BIOLÓGIA CENTRALI-AMERICANA.

ZOOLOGIA.

Class REPTILIA.

Order CHELONIA.

Fam. TESTUDINIDÆ.

CISTUDO.

*Cistudo*, Gray, Cat. Shield Rept. p. 39.

1. *Cistudo mexicana*.


Hab. México, Tampico and Mexico city (*Bocourt*).

Gray was the first who specifically separated from the common type of North-American Box-Tortoise a form whose hind feet are armed with three large claws instead of four. However, in examining the value of this character, Agassiz (Contr. Nat. Hist. Amer. i. p. 444) came to a different conclusion, stating that the outer toe of the hind foot fades away gradually; and, whilst he distinguished not less than four different species of *Cistudo*, these species included three- as well as four-toed specimens.

In a case in which one naturalist, though he has examined many hundred specimens, does not feel justified in expressing a decided opinion, it would be most hazardous for another to do so who has much less material at hand. Yet, having seen specimens of Agassiz's four species, I may be allowed to say that I incline to the belief that there is, in fact, one species of Box-Tortoise only, and that one of its hind toes becomes aborted in the south-western and southern range of its distribution. Nevertheless, I have considered it best to retain the name given by Gray, the more so as both the typical specimens are singularly distinguished by having a small additional scute intercalated between the fourth and fifth, so that there are six vertebrae altogether. This, of

course, may be an abnormal condition peculiar to the locality where the specimens were obtained, and which unfortunately is not known. They are simply marked “Mexico.”

The species seems to penetrate rather far southwards into Mexico, as Bocourt mentions it from Tampico and the city of Mexico.

**EMYS.**


_α. Clemsys._

In Mexico two freshwater Turtles occur (*Emys ornata* and *E. cataspila*) in considerable abundance, which are distinguished by a short head, a short and obtuse snout, and a more or less depressed shell, which is only slightly and indistinctly rugose, and in which the costal scutes are ornamented each by a large ocellated spot more or less distinctly surrounded by yellow and darker concentric rings. The sternum is marked by symmetrical figures formed by black lines arranged in pairs. These figures never form rings on the front part of the sternum, as is the case in an allied species from the United States, to which the names of *Emys holbrooki* and *E. elegans* have been given. On the anal scutes this sternal ornamentation terminates with a more or less straight double transverse line. The markings on the sternum are most distinct in the young, become pale with age, and may disappear altogether.

In the adult stage these two Turtles differ merely by the position of the ocellus on the two middle costal scutes; if each of the scutes be imagined to be divided into four quadrangles, in one species the spot occupies the postero-inferior quadrangle, in the other the postero-superior. Gray (Cat. Shield Rept. p. 25) has already noticed this distinction; but unfortunately he referred the young of one of the species to the adult of the other, so that his *Emys venusta* is synonymous with his *E. ornata*.

Some herpetologists may be inclined to consider both forms as variations; but, until the true relations between the two forms are clearly ascertained, it will be better to distinguish them by separate names. Most probably *Emys ornata* will prove to be the more southern form.

1. **Emys ornata.** (Tab. 1.)


*Emys ornata* (part.), Gray, Cat. Tort. B. M. 1844, p. 22; Gray, Cat. Shield Rept. 1855, p. 24 (not fig.).


Hab. Mexico, Mazatlan (coll. Brit. Mus., Colley, Forrer), Presidio (Forrer); Honduras (Dyson); Costa Rica (Cope); Panama, Chiriqui (Druce).

Of this species we have a tolerably complete series, and, fortunately, from the same locality, namely Mazatlan, so that there is not the least doubt about the pertinence of old and young specimens to the same species. Two of the Mazatlan specimens are the original types of Gray's first description.

In the young (2–3 inches long) each costal scute is ornamented by yellow, green, and blackish concentric rings, which form a large ocellus occupying the greater part of the surface of the scute; a minute yellow spot occupies the centre of the ocellus. The sternum is ornamented by more or less symmetrical black lines placed in pairs, and forming along the middle of the sternum a rather irregular pattern without complete rings in front, and with a more or less straight double transverse line behind.

The longitudinal stripes and bands of the head form an extremely pretty pattern, and are much multiplied by each yellow or green streak having blackish borders; the band along the temple is broad in the middle, becoming narrower in front and behind, and is of a bright orange colour. The ornamental band on the chin is generally interrupted on the throat by a transverse blackish border.

As the specimens grow older, the principal yellow ring of the costal plates appears smaller in proportion to the size of the scute, and the black spot is moved towards the hinder and upper part of the scute.

Beside a number of specimens which have the locality indicated in a more or less vague manner, I have examined the two young specimens collected by Colley at Mazatlan (one of which has been coarsely figured in Capt. Beechey's 'Voyage'), two adult specimens with the shell 10 and 12 inches long (from the same locality, collected by Mr. Forrer), an adult (stuffed) and two young specimens in spirits respectively 2 and 5 inches in length, collected by Forrer at Presidio; the young are figured on Tab. I. A young specimen obtained by Mr. Herbert Druce from Chiriqui, and two specimens from Honduras collected by Mr. Dyson, which are the types of Gray's Emys venusta. Cope records the species from Costa Rica.

It would appear that the specific name of ornata was suggested to Gray by Bell, who, however, has forfeited the authorship by never having published either a figure or a description. Gray was the first who described the species under that name in the 'Synopsis Reptilium,' 1831, p. 30. Duméril and Bibron described it under the same name from a specimen given to them by Bell; they erroneously refer to it Emys annulifera of Gray, which is quite a distinct species. Bell's specimen in the Paris Museum is that also figured by Aug. Duméril and Bocourt in 'Mission Scientifique au Mexique.'
2. *Emys cataspila*, sp. n. (Tab. VI. fig. B, young.)

*Emys ornata* (part.), Gray, Cat. Tort. B. M. 1844, p. 22; Gray, Cat. Shield Rept. 1855, p. 24, t. 12 (not good).


Although our series of specimens of this form is pretty complete, it is far from being satisfactory, inasmuch as they are derived from different sources, with no more precise information as to locality than the term "Mexico" in about half of their number.

The young (2 inches long) shows very much the same pattern and style of coloration of the head, back, and sternum as *Emys ornata*; but the principal ocellus, with its yellow border, is small, occupying only a small part in the postero-inferior portion of each of the costal scutes. This position and size of the ocellus is not greatly changed in three other specimens from 5 to 7 inches in length; in larger specimens the ocellus is advanced more towards the dorsal line, but never occupies the upper half of the costal scutes as in *Emys ornata*. The ocellus consists now of a brownish oval spot with a deep black pupil and a broad yellowish border (see figure given by Gray).

The largest of our specimens has a shell 13 inches in length.

3. *Emys salvini*, sp. n. (Tabb. II. & III.)

*Callichelys venusta* (part.), Gray, Suppl. Cat. Shield Rept. p. 49.

*Hab. Guatemala* (*Salvin*).

This species is closely allied to *Emys ornata* and *E. cataspila*, but differs in the shape of the costal ocellus and of the figure on the sternum. The shape and coloration of the head seem to be the same as in those two species.

The principal yellow ring on the costal scutes is of a suboval shape, and occupies nearly the whole of the depth of the scute. There are several similar, but less distinct concentric rings within and without the principal ring. The ornamentation on the sternum is very symmetrical, ending behind in a pointed angle, and not in a straight and transverse line as in the other two species.

Of this species I have seen only one specimen, the shell of which is 9 inches long. It was obtained by Mr. Salvin in Guatemala, and was referred by Gray to his *Emys venusta*.

The specimen is figured on Tabb. II. and III. of the natural size; and separate figures are given of the vertebral and second costal scutes, which in the main figure are very much foreshortened.
4. **Emys mobiliensis.**


_Hab._ **NORTH AMERICA**, Pensacola, Texas.—**MEXICO**, Nuevo Leon.

Agassiz (*l.c.*) mentions that he had received specimens of this species from Pensacola, Texas, and from Nuevo Leon, near Cadereita, Mexico. I have not seen an example of the species, unless the type of *Emys ventricosa*, the origin of which is unknown, belongs to it.

5. **Emys callirostris.**


_Hab._ **WEST COAST OF CENTRAL AMERICA**.

This, perhaps the most beautiful, species of this section of *Emys*, has been well figured by Gray, so that a further description seems to be unnecessary. Only the typical specimen is known, and there is every reason to believe that it came into the collection of Haslar Hospital with a number of other objects from the west coast of Central America; at any rate, it will be well to include it provisionally in the present list, as it has been confounded with the following species.

6. **Emys umbra.** (*Tabb. IV., V., & VI. fig. A*).


*Emys umbra*, (Bocourt,) O'Shaughnessy, Zool. Record, xiii., Rept. p. 6 *.


This species differs from all the preceding species by the acutely-pointed snout, which is conspicuously longer than the eye. The hind feet, as well as the fore feet, are broadly webbed; the claws sharp and long. The shell is much depressed, slightly rugose or smooth, and generally very similar to that of *Emys ornata*. The type of the coloration of the soft parts also very much resembles that of the latter species, but the

* The author of the Record on Reptiles for 1876 refers to p. 26 of the ‘Journal de Zoologie.’ This is incorrect; he merely used a separate copy of M. Bocourt’s paper, which cannot legitimately be considered a publication, and at the end of which a note is added in which the change of name from _grayi_ to _umbra_ is proposed. As this note does not occur in the really published paper in the ‘Journal de Zoologie,’ 1876, p. 411, the publication of the name _umbra_ rests solely with the notice in the ‘Zoological Record’ as quoted above.
longitudinal bands on the upper part of the head are less numerous and less distinct, the lateral band over the temple is not dilated in the middle, and the band on the chin is bifurcate behind and continued as one of the lateral bands of the throat. The shell of the adult is brownish horn-coloured, each costal scute being marked with an oblong blackish spot situated high above, and very close to the vertebral scutes; sometimes a yellowish ring passes at some distance round the spot. The last vertebral scute bears also a small blackish spot in the middle of its suture with the costal scutes. The sternum is marbled with black, and only now and then faint traces of symmetrical markings may be discerned.

I have not seen the young of this species; it is probably much more brightly ornamented than the adult, and there are indications of the sternum having similar symmetrical markings at this age as are observed in the other allied species.

We have received six specimens, from 10 to 14 inches in length, through Mr. Sumichrast, who obtained them at Tapanan and San Mateo, near Tchuanatepec. A seventh specimen from “Mexico” has been in the British Museum for many years, and was referred by Dr. Gray to his *Emys venusta*.

I have not the least doubt that the specimen from Rio Nagualate on the west coast of Guatemala, described by Duméril and Bocourt as *Emys grayi*, belongs to the same species, the costal spots having become obsolete. Specimens sent by Sumichrast to M. Bocourt were confounded by the latter with *Emys callirostris*, a short-snouted totally distinct species.

This species is aquatic, but herbivorous.

### 7. *Emys pulcherrima.* (Tabb. VII. & VIII. fig. A.)

*Emys pulcherrima*, Gray, Cat. Shield Rept. p. 25, t. 25, figs. 1, 2 (this figure is faulty in representing six longitudinal bands on the neck instead of five).

*Callichelys pulcherrima*, Gray, Ann. & Mag. N. H. 1863, xii. p. 181 (and Suppl. Cat. Shield Rept. p. 49, where the species is confounded with a specimen said to come from South Africa).


**Hab.** Mexico, Presidio (*Forrer*).

The neck is ornamented with five parallel rather narrow red bands edged with blackish; occipital region with some detached spots of similar coloration. A narrow stripe, similarly coloured, runs along the edge of the upper part of the snout and stops behind the supraciliary region. Two similar bands from the eye, round the snout, *above* the nostrils, and finally another round the upper jaw. A short stripe along the median line of the upper part of the snout. Sides of the neck and throat finely punctuated with black. Each scute with some short, curved, yellow, dark-edged bands. Central parts of the sternum blackish or black. Shell depressed, oblong, with the
lateral edges sharp, strongly curved upwards; subcircular and dentated behind in the young. Nuchal narrow; vertebrals distinctly keeled. Toes very slightly webbed.

This species was hitherto known from a very young stuffed example only, 2 inches long, and occupied a very precarious position in systematic works. However, Herr Forrer rediscovered it at Presidio, in Western Mexico, the youngest of the three specimens collected by him being absolutely identical with the type. The largest specimen, an adult female, is 7 inches long.

8. *Emys incisa.*


_Hab._ Mexico, Tehuantepec and Chiapas (*Sumichrast*); Salvador, La Union (*Bocourt*).

A narrow yellow (?) line runs along the upper edge of the snout over the eye to the tympanum; two other shorter concentric lines on the side of the snout, above the nostrils; a fourth on the horny sheath of the jaw. A median single line on the upper side of the snout is sometimes absent. Side of the head with some irregular small ocellated spots; a few similar spots sometimes on the occipital portion of the head. Upper part of the neck without bands or spots, olive-coloured; throat white, immaculate; sides of the neck, and the hinder part of the underside, punctulated with black. Upper part of the shell sometimes uniformly coloured, sometimes with a small, yellow, black-edged ocellus on the areola of each costal scute. Sternum black in the middle, yellowish on the sides. Shell moderately depressed, rather broad, with the lateral margins sharp and strongly reverted; hind margin distinctly serrated, the serrature becoming obsolete in very old specimens. Vertebral keel very distinct. Nuchal small, occasionally absent. Toes very slightly webbed.

The figure given by M. Bocourt is sufficiently accurate to ensure the recognition of this species. The largest specimen I have seen had a shell 8 inches long. It is a terrestrial herbivorous species.


_Hab._ Costa Rica, Limon (Cope).

I have not seen this species, which seems to take its place near to *E. incisa*.

10. *Emys funerea.*


_Hab._ Costa Rica, Limon (Cope).
CHELONIA.

Distinguished by the absence of markings on the upper side of the head and neck; this species will be easily recognized. I have not seen specimens of it.

11. Emys areolata. (Tab. VIII. fig. B.)


Neck with four parallel, white, black-edged bands, the outer of which are far down on the side, and continued forwards over the temple into the supraciliary region; the inner commence from the occipital region. Crown of the head indistinctly marbled; a whitish line along the median line of the upper part of the snout. A minute white speck in front of the upper angle of the orbit (much smaller than in *E. seabra*). Cheek and tympanic region with irregular blackish markings; throat sparsely and minutely spotted with black. Central parts of the sternum bluish or black. Shell depressed, oblong, with the lateral edges sharp, curved upwards. Nuchal equilateral, triangular; vertebrals slightly keeled. Toes scarcely webbed.

The typical specimen came from Lake Peten; the specimen in the British Museum was collected by Mr. Salvin in the same district, and referred by Gray first to *E. seabra* and afterwards to *E. annulata*.

*Emys pulcherrima* of A. Duménil and Bocourt (Miss. Sc. Mex., Rept. p. 15, t. 7) is not the species described under that name by Gray; it represents a menagerie-specimen without precise information as to locality, which has been named *Rhinoclemmys bocourtii* by Gray (Ann. & Mag. N. H. 1873, xii. p. 111), and which possibly may prove to be identical with *E. areolata*.

12. Emys rubida. (Tab. VIII. figg. C, C', C''.)


The coloration of the soft parts, although varying somewhat in details, is characteristic enough. A narrow yellow (?) band runs round the edge of the snout, from one orbit to the other; a second much broader one, horseshoe-shaped, with the convexity towards the front, occupies the crown of the head, and is mixed up posteriorly more or less with the markings of the occiput, which, like those of the neck, consist of blackish
vermiculations which are darkest on the edges and light in the middle. A short, oblique, yellow band behind the eye is very constant. Throat punctuated. The scutes are sometimes without markings, sometimes with indistinct yellowish figures. The areolar portion of each costal scute is frequently ornamented with a small, oval, yellow spot and a narrow annulus. The middle of the sternum blackish. Shell moderately depressed, oblong, with the lateral edges not or slightly recurved. Nuchal small, occasionally absent. Only a trace of a vertebral keel. Toes not webbed.

Of this species we have a series of examples from both localities named. The shell of the largest example does not exceed 8 inches in length. It is a terrestrial frugivorous species. Cope's description was evidently prior to that of Gray; and Bocourt refers, by some error, Cope's name of "rubidus" to his E. incisus.


*Emys scabra,* Bell, *Testud. cam tab.*


_Hab._ Mexico, Yucatan, Tabasco.—_South America, Guiana, &c._

This is a South-American species, common in Dutch and British Guiana and other tropical parts of South America. However, Cope (*l.* c.) refers to it two Central-American specimens, one from Yucatan, and the other from Tabasco. I have not seen these specimens, which are preserved in the Smithsonian Institution, and am therefore unable to confirm Mr. Cope's identification.

*Geocollemys callocephalus,* or *Rhammelyns callocephala,* Gray, Proc. Zool. Soc. 1863, p. 254, is based on a dry specimen, which, after having lived for some time in captivity, came into the collection of the British Museum in the year 1853. Its shell is deteriorated; and of the coloration of the soft parts only so much is preserved as clearly shows that the specimen is identical with *Emys scabra* or *punctularia.* The figure given by Gray of the head of this species is very inaccurate and misleading.

Note.—*Geocollemys melanosterna,* Gray, Proc. Zool. Soc. 1861, p. 205, is an extralimital species. Of the two specimens known, the type bears its original label "Chirambira, Darien," altered in Gray's paper to "Cherunha, Gulf of Darien." Chirambira is a place a short distance north of Buenaventura, where the second specimen was obtained. Thus there is no doubt that this species belongs to the Colombian fauna.

*Geocollemys annulata,* Gray, Proc. Zool. Soc. 1860, p. 231, t. 29, is likewise extralimital, from the coast of Ecuador. It is true that Gray in the Suppl. Cat. Shield Rept. p. 30, and in the Hand-list of Shield Rept. p. 27, refers to Mr. Salvin as the _Biol. Centr.-Amer., Rept., April 1885._
discoverer of the species in Ecuador and on the Gulf of Darien. But this mistake is due to his having confounded (in the last years of his life) Mr. Salvin with Mr. Fraser. In fact, the spirit-specimen said to be from the “Gulf of the Darien” is one of the types, and the very specimen figured. The locality “Darien” became attached to it through the insufficient care of a person who assisted Gray.

DERMATEMYS.


1. **Dermatemys mawii**.


*Dermatemys berardi*, Cope, l. c. p. 120.


*Dermatemys salvinii*, Gray, Suppl. Cat. Shield Rept. p. 50.


**Hab.** Mexico, Tabasco (Cope), Laguna de Terminos, Yucatan (Zool. Soc.), Vera Cruz (Bérard); British Honduras, Belize (Cope, Bocourt, P. de Borre); Guatemala (Salvin).

A vegetable-feeder, called "Tortuga blanca" in Mexico.

CHELYDRA.


1. **Chelydra serpentina**.

*Chelydra serpentina* (Linn.), Peters, MB. Berl. Ak. 1862, p. 627; Cope, l. c. 1872, p. 23.


**Hab.** North America.—Mexico and southwards to Ecuador.

Called "Chiquihuan" in Mexico.

Ranges from Canada to Ecuador. Mexican specimens have been examined by Cope.

2. **Chelydra rossignoni**.

*Emysaurus rossignoni*, Dum. & Bocourt, Miss. Sc. Mex., Rept. p. 18, t. 5, fig. 2.

**Hab.** Mexico; Guatemala (Bocourt).

* The suture dividing the gular plate is much too distinctly represented in this figure; in the original specimen (which is dry) there is no more of a suture than in another from Salvin’s collection—merely a groove in the underlying bone is indistinctly visible in both specimens through the transparent substance of the epidermal scute.