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January 25th.

Vice-President BRIDGES in the Chair.

Forty-six members present.

The Report of Proceedings of the Biological Department for the present month was read.

On report of the respective committees, the following papers were ordered to be printed in the Proceedings.

Description of two New Species of Tortoises.

BY JOHN LE CONTE.

KINOSTERNUM HENRICI.—Testa regulari-ovali, convexa, dorso subcarinato, postice valde decliva, margine non dispanso, laterali perpendiculari, sterno testam non omnino ocludente, cauda longa, unguiculata.

Habitat New Mexico.

Head and neck dusky, on the top slightly varied with paler, beneath and on the sides, including the jaws, thickly speckled with yellow. Upper jaw entire, hooked. Chin with two small warts. Legs and tail dusky, fore feet with two folds on the upper side; hind legs squamous on the hinder side and likewise with two folds; tail black and rather long, furnished with a long, broad and rather pointed nail. Shell brownish yellow, regularly elliptic, convex, very declivous behind, with the remains of an evident keel on the three last scute, anterior and posterior margius not expanded, the lateral perpendicular with a considerable furrow for the greatest part of its length. Vertebral scutæ imbricate, the first one triangular with the apex truncate, applied to the nuchal and first marginal scuta, second, third and fourth urceolate, six-sided, the lower side of the fourth very short, the fifth triangular with all the angles truncate, so as to form a six-sided figure, of which the apical side is very short, the two upper lateral sides long and incurved, the two lower lateral short and perpendicular to the base which is doubly incurved so as to form a waving line; this scuta is applied to the two caudal marginals, the first lateral is irregularly four-sided, the second and third five-sided, the fourth four-sided, the anterior side straight, the superior oblique, the posterior curved first outward and then inward, so as to fit into the sides of the fifth vertebral and the last marginal; the nuchal scuta is small and square; the rest of the marginals except the last one, the caudals being excluded, are oblong, more or less angled on the top; the last one is larger than the rest, three-sided, pointed above and entering a cavity between the last vertebral and the last lateral; the base is straight and the two sides curved; the caudals are four-sided, the upper side curved. Sternum large and yellow, emarginate behind, jointed before by a ligament, behind by a suture anteriorly closing up the box of the shell, posteriorly very partially so; gular scuta very large, triangular, pectorals irregularly four-sided, the outer side a little wider than the inner, the lower side curved, the interior anterior angle very obtuse, the interior posterior rather acute, the two exterior right; brachials triangular with the apex truncate, and the upperside incurved; abdominals quadrangular, the membrane joining them with the femorals so wide as to make the joint appear double, femorals quadrangular, the inner side short, caudals right angled triangular.

Length of the shell 4.7 inches, height 1.9, of head and neck 2.8, of the tail 2.

This new tortoise was brought from New Mexico by Dr. T. C. Henry of the United States Army, and by him through Mr. Cassin presented to the Academy. It is an old individual. It appears that when young the scutæ of the back are marked with concentric striae, and no doubt the whole of the upper surface varied in some degree with darker. When the *K. odoratum* is found in clear water streams it is beautifully varied, thus, for instance, those found in the Ogeechee river, in Georgia, which has a sandy bottom and is seldom or never

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polluted with mud, they are marked on each scuta with diverging or radiating lines of darker.

I have not adopted Mr. Agassiz's name in describing this animal, as I do not think that his arrangement of *Kinosternoids* founded on a proper basis. If I were to adopt his classification, I should describe three of his genera as follows, premising that I think it is offering a violence to nature to separate the two first.

KINOSTERNUM.

Sternum entirely closing up the box of the shell, with eleven scutæ and eight bones, there being no eusternal, but the whole piece may be divided longitudinally from front to rear into two pieces, which are afterwards subdivided. The sternum is bilobed, each lobe moveable from the side of the abdominals on the posterior joint of the hyosternals and the anterior of the hyosternal bones. By closing the two lobes it is enabled to cover entirely the head and limbs; the posterior lobe being as wide as any part of the sternum, there can be of course but very small wings by which it is attached to the carapace. In fact they are scarcely perceptible. The upper jaw is most frequently hooked and the tail armed with a nail.

THYROSTERNUM.

This genus differs from the preceding in the shape and mode of attachment of the sternum to the carapace, the number of bones and of scutæ is the same, but the wings are much longer; it has likewise two moveable lobes, the anterior attached by suture at the sides and by ligament in the centre; the posterior one entirely by suture, both of them narrower than the opening of the carapace, particularly the posterior one; consequently the animal is not able to withdraw its softer parts entirely from view. It is always emarginate behind, the upper jaw is almost always hooked, and the tail generally armed with a nail. The transitus from *Kinosternum* to *Thyrosternum* is so perfect, that it becomes difficult in some instances to say to which genus a specimen belongs.

OZOTHECA.

Sternum very much shorter and narrower than in the other two genera, constituted in the same manner, but the gular plate is generally very small. It is jointed like the others both before and behind. The upper lobe is quite moveable, but the lower little so, inasmuch as the fourth scuta projects somewhat beyond the suture connecting this part with the abdominals, but there is a wide space above it filled with ligamentous matter, which allows of some degree of motion. This joint early in life becomes immoveable. The anterior joint in old animals is apt to become permanently soldered to the adjoining bone. The wings are longer and narrower than in the others.

The following characteristics are common to all these three genera. The chin is furnished with two or more small warts, and the feet have some folds or large scales, the fore feet on the anterior side, the hind feet on the posterior. They all have a strong musky odor.

Although it may appear perfectly proper to separate the last genus from the two others, yet in Wagler's *K. hirtipes* a very near approach is made to *Ozotheca*, it has a very narrow sternum, emarginate behind and the brachial plate is quadrangular, very much resembling what we see in *O. odorata*, the jugular scuta is large and triangular, the upper jaw hooked, and the tail unguiculate; in these three particulars exactly like the *T. Pennsylvanicum*. In the young of the *O. odorata* it is impossible to distinguish the sternum from that of the *T. Pennsylvanicum*, except by the form of the brachial scuta; it is very remarkable, however, that the first which in the adult state has the nuchal scuta small and irregular in shape, when very young has it very large and perfectly triangular. The most of the *Kinosterna* and *Thyrosterna* have the tail armed with a nail. Whether any of the *Ozotheca* are thus furnished I do not know, never having had an opportunity of examining more than two species (unless Wagler's *K. hirtipes* is admitted to be one). Should one, however, be found

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perfectly agreeing in every respect with the *O. odorata*, with the tail unguiculate, I would not hesitate to say at once, that my learned friend's division was unnatural. In all species that I have seen, except those brought from Mexico by Mr. Pease, the posterior lobe of the sternum is emarginate behind, and is but slightly moveable; in the Mexican species, on the contrary, it is entire and capable of entirely closing up the box of the shell; in both cases the faculty arises from the peculiar formation of the joint, being either sutural or ligamentous.

The following is the distribution according to Mr. Agassiz's system of such *Kinosternoids* as I have had an opportunity of examining.

KINOSTERNUM.

Mexicanum, integrum, triliratum.

THYROSTERNUM.

Scorpioides, leucostomum, longe caudatum, pennsylvanicum, sonoriense and Henrici.

OZOTHECA.

Odorata, guttata, hirtipes?

The animal, the description of which follows, was somehow omitted in my monograph in vol. vii. Proc. A. N. S.; it differs remarkably from others of Mr. Agassiz's genus *Kinosternum*, in having the upper jaw not hooked, and the tail not unguiculate.

K. TRILIRATUM.—Head and neck above spotted with yellow, the spots on the cheeks larger, beneath yellowish irregularly varied with dusky, jaws yellow varied with black, the upper entire, not hooked. Chin with four small warts. Fore legs above dusky, beneath yellowish brown with three plicæ or large scales; hind legs cinereous brown with four large scales near the heel. Tail short, black, pointed, without a nail at the end. Shell regularly oval, brown, very convex, strongly tricarinate on the back, very declivous on the sides, the outer edge of the margin sharp and projecting, the scutæ with more or less concentric striæ, and others radiating from behind. Vertebral scutæ elongated, imbricate, emarginate behind, the first triangular with the apex somewhat truncate and the base angled, applied to the nuchal and first marginal only, the second, third and fourth hexagonal, the anterior and posterior sides very short, the fourth with the two lower sides much shorter than the upper, the fifth triangular with the apex truncate and the base a little angled; the first lateral is four-sided, the lower side with four facets, second and third pentagonal, fourth irregularly five-sided; the nuchal scuta is wider at the base, the rest of the marginals square and oblong, increasing in size to the extremity of the shell: sternum yellow, varied with black, entire and rather pointed behind, bivalved, completely closing up the box of the shell, wings very short, applied partially to the fourth and entirely to the fifth, sixth and seventh marginal scutæ, all the scutæ of the sternum are concentrically striate; the gular large, triangular, pectorals irregularly four-sided, the anterior side curved, brachials triangular with the apices truncate and the base rounded, caudals right angled triangular; inguinal scuta long, rather wide, joining the axillary.

Length of the shell 5 inches, height 2.5, tail .8. Brought from Mexico by Mr. Pease.

I conclude by observing that Mr. Agassiz thinks my *K. Mexicanum* is the same as Mr. Bell's *K. Shavianum*. The author last named supposed that he possessed the identical specimen from which Dr. Shaw made his figure. There can be no doubt that Dr. Shaw's figure represents my *K. Mexicanum*, although the shell is represented without a nuchal and without caudal marginals. Mr. Bell's species has the sternum narrower than the shell, and emarginate behind; it undoubtedly belongs to the *scorpioides*. In the seventh volume of Proc. A. N. S., in my description of this species, it is said that the sternum is entire; it is really shallowly emarginate. They

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both belong to the genus *Thyrosternum*. Mr. Agassiz likewise thinks that my *Emys concinna* and Dr. Holbrook's *E. Floridana* are the same. My friend will pardon me when I say, that he probably has not had an opportunity of examining my species. There is no specimen in the collection of the Academy which I can recognise as the animal once described by me. These two species are by no means alike. The *E. concinna* is most beautifully smooth, nothing can be more so; the *E. Floridana* is extremely rough with longitudinal rugæ, it is besides sometimes three times the size of the other, and the marks on the head and neck are entirely different. According to this excellent naturalist the *K. longicaudatum* and *K. brevicaudatum* of Spix, form but one species. They differ, however; the first has the sternum sharply emarginate behind, and the brachial scuta is narrow, triangular and very much truncate at the apex. In the other the sternum is bluntly emarginate behind and the brachial perfectly and acutely triangular. Mr. Bell's *scorpioides* is not the animal described so long ago under that name, as the want of the caudal nail sufficiently shews; the specific name of this tortoise was given it on account of that appendage. Neither is it the *K. brevicaudatum* nor the *longicaudatum* of Spix. This author thinks that the female tortoises have long and the males short tails; it is just the reverse.

When my son was in Honduras, he obtained a species of tortoise much larger than any that we have seen in the United States. The shell was nearly two feet long; unfortunately this was afterwards destroyed, but the head and limbs having been put into a jar of alcohol reached here in safety. In order to keep alive the remembrance of this animal and to induce others to look for it, I add a description of the head and tail, the only parts to which I can have access at present, premising that it belongs to the genus *Emys* (Ptyche-mys Agass.) and has the jaws serrate in the same manner as the *E. mobiliensis*.

EMYS VALIDA.—Head and neck above dusky inclining to brown, striped with yellow, the stripes on the top very few, on the sides very numerous, one of them running from the middle of the orbit to the back part of the neck, widens considerably after it passes the superior part of the cheek; beneath yellow with numerous lines of dusky; nose and jaws striped with yellow, jaws serrate, the lower one hooked, the upper emarginate. Tail dusky with two yellow lines on the top and three on the under side, the outer one of which on each side branches off in such a manner as to surround the vent, above which it crosses the tail transversely. Head 4 inches long, tail 3 inches.

Sixty years ago, in the Tammany Museum in New York, there was the shell of an *Emys* three feet long; it had been used by an Indian as a shield and had varied devices painted on it; it was said to come from Lake Erie. Nothing like this has since been seen, but I am told that in the head waters of the Mississippi tortoises of an immense size and in great quantity have been observed.

Since writing the above, Prof. Baird has called my attention to the Atlantic Journal of Mr. Rafinesque, where there are some remarks on the tortoises of the United States. This author names the *Testudo Carolina*, the *Kerobates* of Agassiz, *Gopherus*; his *Cheliphus* appears to be the true *Kinosternum* Agassiz, the *Uronyx* the *Thyrosternum* of the same; *Didiela* is the *Cistudo*, *Chelopus* is *Nanemys* and *Cheliurus* is the *Chelydra*.

Although it has become customary to pay no attention to any thing published by this very indefatigable explorer of the productions of our country, I do not think it right when a genus or a species has been announced as suggested or discovered by him, to pass it over without notice. From an unfortunate shipwreck in which he lost every thing that he possessed in the world, he became disordered in his intellect. Notwithstanding his propensity for seeing differences which were not apparent to others, many of his observations are truly valuable, and no naturalist should think his labors perfect unless he has searched through the many publications of this unfortunate naturalist, and discovered whether or no he had been anticipated by him. No one seems ever to have looked for his *Opalone*, a soft shelled tortoise with five nails, found in the upper branches of the Hudson River.

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