NAUTILUS (CRYPTOCERAS) ROCKFORDENSIS, M. & W.

As the only specimen of this shell we have seen consists of not more than half of a volution, we are left in some doubt whether it is a *Cryptoceras* or a *Gyroceras*. Its volutions were evidently not embracing, as they are not at all concave on the inner side, but rounded all around, so as to present a slightly oval, or subelliptic section, the transverse diameter of which is to the dorso-ventral, as 132 to 110. The half volution curves around an umbilical cavity apparently rather more than half as wide as the greatest dorso-ventral diameter of the volution at the same point. The siphon, although not quite in contact with the dorsal side, is so near it as to give the internal cast the appearance of having a small deep dorsal lobe. The septa are distant, measuring, on the dorsal side, about two-fifths the dorso-ventral diameter of the whorl at the point of measurement, and their edges pass almost directly around the whorls. (Surface, number of whorls and aperture unknown.)

Length of a half turn, including a small portion of the last chamber, measuring around the dorsum, 3·78 inches; greatest transverse diameter at the larger end, 1·80 inch; dorso-ventral do., 1·60 inch.

It is probable, judging from analogy, that the lip of this species, in entire specimens, will be found to be pinched out or projecting laterally on each ventro-lateral margin of the aperture, as in some other species of this type. We know of no other species with which it is liable to be confounded.

Locality and position.—Goniatite limestone, of the Kinderhook division of the Subcarboniferous series, at Rockford, Indiana.

NOTE.—In the August number of the Proceedings of the Academy for 1865, p. 165, we proposed the name *Evactinopora*, for a curious radiated body, evidently belonging to the *Polyzoa*, from the carboniferous rocks of Missouri. Since that time, farther comparisons lead us to think this fossil possibly not generically distinct from *Conodictyum* of Münster. If so, the name of our species will of course become *Conodictyum radiatum*. It is a little remarkable, however, that the known species of *Conodictyum* are from Jurassic rocks.

August 7th.

The President, DR. HAYS, in the Chair.

Fifteen members present.

August 14th.

The President, DR. HAYS, in the Chair.

Fifteen members present.

August 21st.

The President, DR. HAYS, in the Chair.

Twenty-two members present.

Prof. Cope exhibited the remains of a gigantic extinct Dinosaur, from the Cretaceous Green Sand of New Jersey. The bones were portions of the under jaw with teeth, portions of the scapular arch, including supposed clavicles; two humeri, left femur, and right tibia and fibula, with numerous

phalanges, lumbar sacral and caudal vertebræ, and numerous other elements in a fragmentary condition.

The animal was found by the workmen under direction of J. C. Voorhees, Superintendent of the West Jersey Marl Company's pits, about two miles south of Barnesboro, Gloucester Co., N. J.

The bones were taken from about twenty feet below the surface, in the top of the "chocolate" bed, which immediately underlies the green stratum which is of such value as a manure.

The discovery of this animal filled a hiatus in the Cretaceous Fauna, revealing the carnivorous enemy of the great herbivorous Hadrosaurus, as the Dinodon was related to the Trachodon of the Nebraska beds, and the Megalosaurus to the Iguanodon of the European Wealden and Oolite.

In size this creature equalled the Megalosaurus bucklandii, and with it and Dinodon, constituted the most formidable type of rapacious terrestrial vertebrata of which we have any knowledge. In its dentition and huge prehensile claws it resembled closely Megalosaurus, but the femur, resembling in its proximal regions more nearly the Iguanodon, indicated the probable existence of other equally important differences, and its pertinence to another genus. For this and the species the name of LAELAPS AQUILUNGUIS was proposed.

The following were some of the special characters.

Mandible.—Two portions, one from the anterior part of the ramus. The latter measure three inches in depth from the outer alveolar border, which is a little more elevated than the internal, and 1.5 in. in thickness at the fractured edge. A longitudinal series of vascular foramina extends along the middle of the external face. The teeth are implanted in deep alveolæ, had oval compressed fangs, and lenticular compressed crown, with large pulp cavity. The crown was elongate, subacute and slightly curved backwards, minutely striate, and strongly serrate on both edges to near the fang; this portion of a young tooth yet in the alveolus measured 2⅛ in. long and 11-16ths in transverse diameter.

Left Femur.—The great external trochanter massive and elevated to the plane of the head, from which it is only separated by a slight depression, and to which it is slightly transverse. The head not projecting far beyond shaft, and without constriction below. In Megalosaurus the head is produced beyond a kind of neck, and the great trochanter is much smaller and lower down, differing thus from the other known Dinosaurs. The femur of Laelaps is therefore much flattened from before backwards above, but is cylindrical and curved backwards medially. Distally the condyles are more like Megalosaurus than Hadrosaurus or Iguanodon, yet quite different from the first. The length of the inner condyle greater than the transverse extent of the two, the popliteal groove deeper and the trochlear aspect more concave, leaving a narrower connection between the condyles. The inner condyle was much narrower and both more projecting than in Megalosaurus. The third trochanter is small, and lower down than in any known Dinosaur, being removed less than one-third the length of the femur from the inner distal condyle.

	In.
Length of femur,	31
Breadth across head and great trochanter,	6⅜
Circumference medially,	11
Antero-posterior length of inner distal condyle,	6.5
" " " outer " "	3.25
Transverse extent of united condyle,	4.5
" " popliteal groove (at middle),	1.5

Right tibia.—The tibia is more slender than that belonging to Megalosaurus described by Prof. Owen, and the distal articular surface, instead of being

lozenge-shaped, is cuneiform, the inner wide extremity oval rounded. Inner transverse breadth of proximal head one-fourth total length. Anterior ridge very strong, much incurved, disappearing at between the proximal fifth and fourth of length; internal ridge on proximal half, strong, but not reaching condyles. Posterior condyles separated by a deep notch, inner larger than outer; (outer larger, Megalosaurus b u c k l a n d i i). Shaft much compressed from before backwards, and distal articulation at right angles to proximal, concave on its interior half.

	In.
Length of tibia,	30.75
Circumference proximal head,	15.
Antero-posterior diameter do	7.5
Posterior transverse do. do	5.5
Transverse length distal condyle,	7.
Longitudinal inner breadth,	2.5
Circumference of shaft at middle,	10.5

These long bones are hollow, with thick walls of dense bone; diameter of medullary cavity at middle of tibia 1.5 inch.

Fibula.—Twenty-three inches preserved, proximally concave and dilated; condyle curved, narrow acuminate oval, in profile concave, then rounded descending; length 6 in., median breadth 1.75 in. Just below the condyle on the inside is a deep concavity with abrupt superior and lateral walls. Shaft less flattened below, but slender, reaching a width of $1\frac{1}{8}$ in.

Humerus.—Both are preserved, but lack the distal condyle; about half the olecranar fossa of one remains, furnishing an indication of the breadth of that extremity. They are proximally much dilated, having a very strong postero-external ala and a shorter antero-internal dilatation. They are not half the length of the femur; the shaft is flattened antero-internally. Of the proximal articulating surface the proper condyle is lost, but a narrow surface continuous with it externally does not extend further out on the dilation than opposite to the middle of the shaft. Olecranar fossa large and well marked, not near to penetrating; medullary cavity of shaft relatively smaller than in the bones of the leg.

	In.
Length of humerus (restored),	12
Greatest proximal breadth,	3·75
Distal breadth across olecranar fossa,	3.
Circumference of shaft,	$5.\frac{3}{8}$

These humeri are relatively shorter than in Hadrosaurus and Iguanodon, and the external alæ do not pass so abruptly into the shaft as in them.

? Clavicles.—Two lateral elements are nearly similar to those identified by Owen in Iguanodon with clavicles, and by Leidy in Hadrosaurus with the pubes. Their disproportionate size, as compared with the humeri in Laelaps, renders their recognition as clavicles difficult; they are very unlike usual forms of pubes. Each has a gentle sigmoid flexure, and a subtrigonal section They are flattened at the inner extremity and dilated with a margin at right angles to the shaft; the whole extremity is not preserved; the flattened portion is hollow, while the shaft is entirely solid. Length 18.5 inches.

Phalanges.—No. 1. An ungueal phalange of remarkable size and destructive use. The depth at the proximal articulation is about the same as in Megalosaurus b u c k l a n d i i, (two inches without inferior tuberosity) but the length is considerably greater. Form everywhere compressed, especially at tip, rounded above. Below the articulating surfaces is the point of insertion of a large flexor tendon, a flattened subglobular process, separated by a groove except in front. The groove extends on each side distally on the middle, to the tip. The general form is not unlike that of a rapacious bird, but is more compressed.

	In.
Length on convexity,	9⅜
Chord from articulatory surface,	6¾

Surface slightly striated at the base on one side.

No. 2. Penultimate. Proximally higher than broad, distally broader than high; two elevated articular surfaces proximally, distal condyles separated by a deep groove and much prolonged inferiorly; a fossa on each side eccentric to the condyle. Superior outline straight, inferior descending behind.

No. 3. Also penultimate, is flatter and more parallelogrammic in section than the last.

No. 4. Antepenult? more cylindrical, condyles broken.

	In.
Length, No. 2,	4.75
Proximal elevation,	1.75
" breadth below,	1.75
Breadth shank below,	1.25
Distal width,	1.25
" " of condyles below,	1.75
No. 3, proximal breadth below,	2.125
Breadth shank below,	1.50
Terminal and inferior breadth distal condyles,	1.875
No. 4. length,	6.

Vertebræ.—No cervical or dorsal vertebræ were preserved; very few lumbars, a fragment of two of the connate sacrals and numerous caudals were all as yet in Prof. C's possession. All are much constricted medially, or hourglass shaped, the centrum cylindrical in section throughout in most of the caudals, the anterior of the latter and the lumbars of deeper vertical than transverse diameter throughout. The articular surfaces were moderately shallow biconcave in all, most strongly in the subproximal caudals. The neural arches attached by permanent suture, and inferior surfaces for articulation of chevron bones. None of the caudals offer indication of elevated neural spines; they appear to have been on the majority low, and of considerable longitudinal extent. Articular surfaces for chevron bones cease near the middle of series, so that we can safely infer that the tail was cylindrical. Zygapophyses turned upward, not outward.

	In.
Length of a median caudal,	4.625
Breadth centrum,	2.375
Length base neural spine,	3.25
Length of a distal caudal (with neural canal),	2.875
Diameter centrum transverse,	1.125
" " vertical,	.875
Proximal caudal (with short diapophysis) length,	4.5
Depth centrum,	3.125
Width, "	3.
Lumbar, depth centrum,	4.5

The disproportion between the fore and hind limbs of the Iguanodon, together with the compressed form of the tail suggested to Prof. Owen an aquatic habit, a relation of proportions of limbs to habit seen in the tailless Batrachia. The discovery of the massive short-toed foot of the Iguanodon subsequently, has lent little countenance to the supposition of its entire adaptation to aquatic life. Dr. Leidy has regarded this disproportion in the case of the Hadrosaurus as an index of a habit like that of the Kangaroos (Macropus, etc.), and that that monster rested in an oblique position on the hind limbs and tail, and reached upwards with its muzzle and short fore limbs to the foliage on which it fed.

That such a habit characterized the Laelaps is very probable; the tail was nearly cylindric, and from the extent of the condyles of the femur, the hind limb must have been considerably flexed. The small size of the fore limbs must have rendered them far less efficient as weapons than the hind feet, in an attack on such a creature as Hadrosaurus; hence perhaps the latter were preferred in inflicting fatal wounds. The exceedingly eagle-like character of the digits and claws and ornithic type of sacrum elucidated by Prof. Owen, suggest a resemblance in the use of the limb.

The bulk of the species, as compared with that of Hadrosaurus, illustrates again the law observed in the relation between Felis and Bos, Thylacoleo and the herbivorous implacentals of its time, and the other raptorial and herbivorous Dinosauria, which might probably be reduced to exact terms.

The remains indicate an animal of near 18 feet in length, which could probably raise itself to a height of six feet at the rump

To recapitulate; the genus Laelaps belongs to the family Dinodontidæ, which is characterized by its contractile raptorial claws and slender digits, and compressed sabre-shaped teeth. It differs from Megalosaurus in its femur, and from Dinodon in that teeth of the latter have two posterior serrate edges separated by a posterior plane. From supposed Dinosaurian genera of doubtful affinity, it differs e. g. from Regnosaurus *Mant.* in the totally different humerus, and from Pelorosaurus and Streptospondylus in the vertebræ. Cetiosaurus and Cimoliasaurus were perhaps mutilate like the Cetaceans, according to Owen and Leidy.

In connection with the same fossil were found Cucullæa and Baculites sp., and not more than twenty feet off a femur of Hadrosaurus; also portions of Mosasaurus, Hyposaurus, Thoracosaurus and Bottosaurus, occurred in the neighborhood.

The phalanges figured by Prof. Leidy (Smithsonian Contributions xii.) Cretaceous Reptiles, Tab. 17, fig. 8—11, probably belong to the present species. They are included under the head of animals allied to Hadrosaurus.

In conclusion, the thanks of scientific men are due to Superintendent Voorhees for the interest and care evinced in the preservation of these valuable specimens. Were all persons engaged in digging marl equally interested in the preservation of bones which come under their notice, we might have been far nearer an elucidation of this, one of the most extraordinary faunæ which have been placed upon our planet.

August 28th.

The President, DR. HAYS, in the Chair.

Fourteen members present.

Gen. S. Wylie Crawford, M. D., U. S. A. was elected a Member.

The following paper was presented by permission, reported on favorably by the Committee appointed, and ordered to be published:

Notes on the VESPERTILIONIDÆ of Tropical America.

BY H. ALLEN, M. D.

I.

The study of the Vespertilionidæ of Tropical America has never been undertaken by any one having large collections at his command. With others, I have hitherto refrained from entering a field where such facilities, and an acquaintance with type specimens, appeared to be necessary aids to produce