transversely in the middle of the elytron, the space anterior and posterior to this large spot being nearly free from markings.

Long. 3–4 lin. ♂ ♀.

Ega; less common than the type*.

[To be continued.]

VII.—*On a new Species of Hyæna from the Red Crag of Suffolk.*

By E. Ray Lankester.

[Plate VIII.]

Most of the terrestrial Mammals of the Red Crag strata in England are known by few and fragmentary specimens, consisting either of teeth or portions of sea-worn jaws. The species at present recognized amount to thirteen; they are as follows, and are nearly all identical with species from Miocene beds on the continent of Europe:—*Rhinoceros Schleiermacheri*, Kaup; *Tapirus priscus*, Kaup; *Sus palæochœrus*, Kaup; *Sus antiquus*, Kaup; *Equus*, sp., Owen; *Hipparion*, sp., Owen; *Mastodon angustidens*, Owen; *Cervus dicranoceros*, Kaup; *Megaceros*, sp., Owen; *Felis pardoides*, Owen; *Pterodon*, sp., Owen; *Canis*, sp., Owen; *Ursus*, sp., Owen.

The relations of land and water at the time of the deposition of the Red Crag it is not my intention to discuss, although the presence of a Miocene land-fauna associated with marine Mollusca of an eminently arctic type may have some important bearings on that subject. Attention is merely drawn to the fact as showing the necessity of a comparison with Miocene species in attempting to identify any apparently new Mammalia from the older Crags of Suffolk.

Figs. 5, 6, 7, Pl. VIII., are drawings of a tooth belonging to a species of Hyæna which the author obtained from the Red

* The following Rio-Janeiro species belongs also to section 2 of the genus *Sporetus*. It has a strong resemblance to *Probatius ludicrus*, and is confounded with it in some collections:—

S. probatioides. Oblongus sive ellipticus, purpureo-fuscus, sericeus, cinereo maculatus. Caput fuscum, sericeum. Antennæ longissimæ, breviter setosæ, purpureo-fuscæ, articulis (tribus basalibus, 7mo et 9^{o} exceptis) basi griseis. Thorax convexus; spinis lateralibus minutis mox pone medium sitis; dorso fusco angulis et margine posticis obscure cinereo maculatis. Elytra apice subsinuato-truncata, angulis obtusis, dorso nigro-setosa, punctata, purpureo-fusca, sericea, guttis sex basalibus, maculis duabus lateralibus (una magna ante medium, altera parva pone medium) et signaturis apicalibus cinereis. Corpus subtus griseum. Pedes subelongati, obscure castanei, griseo annulati, haud setosi; femoribus valde clavatis. Maris segmento apicali abdominis emarginato. Long. 4½ lin. ♂. *Hab.* Rio Janeiro, a Dom. Squires lecto.

Crag at Felixstowe, in Suffolk. The specimen presents that peculiar gloss on the surface and mineralized appearance which is characteristic of dental remains from this deposit. In addition to these circumstances, portions of the shelly matrix still adhere between the two fangs of the tooth; so that there can be no doubt as regards its claims to belong to the same deposit which has furnished the remains of the *Felis pardoides*, *Mastodon angustidens*, &c. The author has submitted the tooth to Dr. Falconer, who "infers it to be an upper third premolar of a species of Hyænoid animal, and probably *Hyæna*," and "would approximate it to a species of the subgenus *Crocotta*, which includes *H. spelæa* and *H. crocuta*. The fossil does not appear to belong to the Miocene *H. Hipparonum* of the Vaucluse, which is imperfectly known. Fossil Hyænas are got in the Val d'Arno (Miocene), which are not yet sufficiently made out. The above opinion is expressed with the reserve dictated by the very limited amount of the evidence—a solitary premolar."

The characters of the subgenus *Crocotta* of Kaup are the presence of spots instead of stripes on the skin, and the absence of a mane and anal pouches, which are possessed by the type of the other genus, *Hyæna striata*. The dental characters, however, form the most important distinction. In both types the formula is, $i.\frac{3-3}{3-3}$, $c.\frac{1-1}{1-1}$, $pm.\frac{4-4}{4-4}$, $m.\frac{1-1}{0-0}$. The molar tooth is very small in *H. striata*, presents a narrow oblong surface, and is inserted by two fangs. In *H. crocuta* or *Crocotta maculata* the molar is quite rudimentary, and has a circular conical crown. In *H. spelæa* it is even still smaller, and is inserted by a single process. The fourth premolar of the lower jaw further distinguishes the two subgenera—in *H. striata* a very prominent tubercle being persistently developed, which is absent in *H. crocuta* and *H. spelæa*. With regard to the third premolar of the upper jaw, which more immediately relates to the fossil under description, in *H. striata* the central cusp of the tooth (Pl. VIII. fig. 4) is less produced and less cylindrical than in *H. crocuta* or *H. spelæa*, the "cingulum" is not appreciably developed, whilst an anterior and posterior tubercle are very prominent. In *H. crocuta* and *H. spelæa*, the "cingulum" is invariably strongly marked, and is developed posteriorly so as to form an elongated ascending ridge, which is not, however, comparable to the tubercles in *H. striata*. It is not difficult thus to separate into subgenera the living and Pleistocene species; but when we go further back in time, and examine the species of older deposits, the distinctions fail, and a combination of characters is found which renders it impossible to place the Miocene and older Pliocene species of *Hyæna* in either subgenus. In fact this is what would be anti-

cipated, it being a pretty generally received axiom that the divergence of types increases as we ascend the geological ladder. The tooth from the Red Crag, which is the upper third premolar of the *left* side, is less produced in proportion to its length and breadth than the corresponding tooth of any of the other species I have been able to examine. The anteroposterior measurement is also proportionately larger than in other species. The "cingulum" is slightly developed all round the base of the crown, and posteriorly is enlarged into a very conspicuous ridge, as in *H. spelæa*, but this does not abut against the central cusp. Between the "cingulum" and cusp a small tubercle exists, which would therefore approximate it to the *H. striata* type. No anterior tubercle exists, as there does in *H. striata*, but the "cingulum" is slightly enlarged (figs. 5, 6, 7).

There appears to be no description of any species of *Hyæna* corresponding with the characters of this tooth, the specimens from the older Continental beds being, as far as I am able to judge, very different, if M. de Blainville's memoir may be relied on. I therefore, for the sake of perspicuity and convenience, propose to call this species *Hyæna antiqua*, provisionally. If at any time further material should identify it with any known species, my name must be rescinded. It rests on facts quite as characteristic and distinctive as does the *Felis pardoides* of Owen, of which we still require further evidence before affirming it positively to be distinct from the *Felis antediluviana* of Kaup, from the Miocene of Germany.

The following is the arrangement of species of *Hyæna* given by M. de Blainville, in which I have inserted the new Crag form:—

Hyæna striata, *Zimmerm.* India (living).
Syn. H. vulgaris. H. Sivalensis?
H. prisca, *De Serres.* Caverns of Lunel-Viel.
Syn. H. Monspessulana, *Christol.*
H. arvernensis, *Croizet & Jobert.* Auvergne.
H. fusca, *Thunb.* Cape (living).
H. Perrieri, *Croizet & Jobert.* Auvergne.
H. intermedia, *De Serres.* Lunel-Viel.
H. spelæa, *Goldfuss.* France, England, &c.
H. crocuta, *Bodd.* Cape (living).
H. antiqua, *Lankester.* Felixstowe, Suffolk (Red Crag).

EXPLANATION OF PLATE VIII.

Fig. 1. Upper third premolar tooth (left side) of *Hyæna crocuta*, Bodd.
Fig. 2. Ditto of *Hyæna spelæa*, Goldfuss. From Kent's Hole.
Fig. 3. Ditto of *Hyæna arvernensis*, Croizet & Jobert. Auvergne.

Fig. 4. Ditto of *Hyæna striata*, Zimmerm.; three-quarter view, to show the anterior tubercle.
Figs. 5, 6, 7. Ditto of *Hyæna antiqua*, Lankester. Red Crag, Suffolk.
Fig. 8. Ditto of *Hyæna striata*, Zimmerm. View of the crown of the tooth.
Fig. 9. Ditto of *Hyæna crocuta*, Bodd.

VIII.—*On Species of Ostracoda new to Britain.*

By George S. Brady.

[Plates III. & IV.]

The following species of freshwater Entomostraca have been taken during the present year in the counties of Northumberland and Durham. One of them (*Cypris affinis*) is a Continental species, not heretofore recorded as a native of Britain. The rest are now for the first time described. To these descriptions I have appended a few notes on the animal of *Cyprideis torosa* (Jones), and on its occurrence in a recent state in this district.

Fam. Cypridæ.

Subfam. 1. CYPRINÆ (Dana).

Genus Cypris, Müller.

Cypris oblonga, n. sp. Pl. III. figs. 1–4.

Elongate, subreniform; lower margin slightly sinuated; upper edge considerably arched, highest in the middle; extremities rounded, the posterior being the more obtuse. Seen from above, the carapace is ovoid in shape, the junction of the valves forming, toward the extremities, a well-marked keel, which is most prominent anteriorly. The valves are clothed with a few scattered hairs, and marked irregularly with one or more transparent patches, which appear light or dark according to the mode of illumination. Colour light brown. Length $\frac{48}{1000}$ inch; height $\frac{26}{1000}$ inch.

This species is nearly allied to *C. fusca*, which differs from it in being broader and more tumid, as well as in the surface-markings. The abdominal rami of the two species are also different, as may be best seen by a comparison of the figures (Pl. III. figs. 4 & 5). The "lucid spots" are much larger and more distinct in *C. oblonga*. It is perhaps worthy of notice that specimens of *C. fusca*, when steeped in solution of potash, impart to the liquid a beautiful purple colour. I have not noticed this with other species, but should suppose it likely to occur where a sufficiency of brown pigment exists in the shell.

Cypris oblonga was taken in a pond at Fenham, near Newcastle, in April 1863.