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4. *Sexradiate spicules.*

- a. With the rays simple, elongate, attenuated, smooth or spinulose.
- b. Rays cylindrical, blunt, rugose at the end.
- c. Rays short, thick, entirely rugose or spinulose.
- d. Rays attenuated, with side rays.
- e. Rays enlarged at the end, simple or torn.
- f. Rays divided into elongated simple branches at the end.
- g. Axis elongate, ending in short recurved rays at the end used for anchoring.
- h. Axis and rays ending in 4 or 8 recurved lobes.

5. *Multiradiate spicules.* Rays tapering or cylindrical, smooth or tubercular.

6. *Spicular spherules.* Orbicular or oblong, smooth or tubercular.

7. *Birotulate spicules.*

XXVIII.—*Note respecting the Tracheal Pouch of the Emu.*

By MILLEN COUGHTREY, M.B., Demonstrator of Anatomy, Liverpool Royal Infirmary School of Medicine. (Communicated by Dr. J. MURIE, Professor of Anatomy, Royal Veterinary College, Edinburgh.)

[AMONG other items of intelligence from my friend Dr. Coughtrey is one relative to some points in the anatomy of an Emu (*Dromæus novæ-hollandiæ*, Vieill.) examined by him. He mentions having found a hitherto unnoticed valve guarding the orifice of the right precaval vein, a detailed account of which he intends shortly to publish. As regards a probably similar structure in the ostrich (*Struthio camelus*), I have called his attention to Professor Macalister's paper on the anatomy of this bird (Proc. R. I. A. 1864, p. 541). Dr. Coughtrey's observations on the tracheal pouch I subjoin in abstract, his further minutiae forming a separate communication to the Literary and Philosophical Society of Liverpool. As his researches partially corroborate and partially differ from my own, I have thought a short notice might appropriately be inserted in the 'Annals.' Dr. Coughtrey says:]

In a specimen of this creature which I had the opportunity of dissecting on the 8th of March last I found the tracheal pouch, which is a marked character of the Emu as distinguished from other Struthious birds. The sac in question has already

been so well described by previous observers, that I shall content myself with simply pointing out a few of the more important peculiarities in the present specimen.

The slit in the anterior part of the trachea is caused by the deficiency of ten rings in front. The right lip of the slit has eleven cartilaginous elements, the left only ten. The extra or eleventh cartilaginous element is owing to a small bar of cartilage being attached to the lower border of the right half of the uppermost incomplete ring. This corresponds somewhat curiously with the adult male and adult female of Dr. Murie's dissection (*vide* P. Z. S. 1867, p. 409). In his specimens the lowest incomplete ring bifurcated; in my specimen it was the uppermost incomplete ring, but it did not bifurcate.

As regards the number of incomplete rings my specimen agrees with that described by Mr. Robert Anderson (quoted by Murie, *l. c.* p. 407).

The sac markedly springs from the lips of the fissure, and is evidently continuous with the elastic band intervening between the cartilaginous rings. Its walls were composed chiefly of the white or areolar tissue, but with much of the yellow variety diffused through it.

In Dr. Murie's adult female bird there were certain band-like duplications of the wall of the sac partially dividing it; in my specimen these were not present, the sac being simple and undivided. It may further be remarked of the latter that there was no *cul-de-sac* at the left upper end; but otherwise the general form agreed with that figured and described by Dr. Murie.

I am rather inclined to take exception to the close nature of the homology between it and the air-sac of the chameleon. In the Emu we have undoubtedly a tracheal pouch; in the chameleon it may be regarded more as a laryngeal pouch.

The specimen herein commented on is preserved in the Liverpool Free Library and Museum; and I may mention that I am indebted to the courtesy of the curator, T. J. Moore, Esq., for permission to examine the bird.

XXIX.—*List of Lepidoptera in a small Collection sent from Peru by Mr. Whitely, with Descriptions of the new Species.*
By ARTHUR GARDINER BUTLER, F.L.S., F.Z.S., &c.

THE present collection was made at Huasampilla, 9000 feet elevation. As regards the butterflies it is decidedly peculiar,