Lo sviluppo dei colori non è in ragione diretta della quantità di luce che l'animale può ricevere.

Lo sviluppo dei colori è in diretto rapporto collo sviluppo generale dell' animale; la denutrizione e lo stato patologico producono un indebolimento della colorazione.

I climi molto secchi inscuriscono le colorazioni; mentre quelli molto umidi tendono a rischiararle. I colori degli animali variano col variare dell' altezza dei luoghi sul livello del mare. Più si sale più le tinte diventano intense.

Le specie limitate alle isole hanno spesso colorazioni più oscure di quelle continentali.

Le varie regioni zoologiche hanno, a quanto pare, alcuni colori più o meno abbondanti. Nella regione paleartica abbondano: il bianco, il grigiastro, il nero ed il gialliccio. Nella regione etiopica sono molto sviluppati il gialliccio, il bruno. Nella regione neotropicale vi è grande sviluppo di verde e di rosso. Nella regione indiana troviamo grande abbondanza di toni gialli. Nella regione australiana predominano le tinte oscure e sopratutto il nero.

Generalmente nei vari gruppi animali le forme più grosse hanno colorazioni più uniformi di quelli di mole più piccola dello stesso gruppo.

Le parti che sono meno invista in quasi tutti i gruppi di animali sono spesso vivacemente colorite o macchiettate, mentre le altre hanno colorazioni uniformi ed oscure.

I colori sessuali sono in stretto rapporto collo sviluppo generale dell' animale. I maschi hanno in generale colorazioni più vivaci. In vari casi tuttavia nei quali le femmine sono più grosse e più forti dei maschi, esse sono anche più vivacemente colorite.

La colorazione dei giovani è spesso diversa da quella degli adulti ed è simile per lo più a quella delle femmine nelle quali perciò si ha un fenomeno di neotenia o meglio di ebasosia. I giovani di specie molto diverse nel colore dello stato adulto sono spesso molto simili fra loro.

Torino, R. Museo Zoologico, 24. Marzo 1884.

4. The supposed taking-in and shedding-out of water in relation to the vascular system of Molluscs.[1]

By E. Ray Lankester, Professor in London.

eingeg. 30. März 1884.

1) The supposition that water is admitted by pores into the vascular system of Molluscs and there mingles with the blood, is favoured

by the apparently well-ascertained (?) fact that water is admitted by the madreporite to mix with the coelomic fluid of the Echinoderms.

The supposition that there may be a correlated out-pouring of the contents of the vascular system is favoured by the undoubted fact that the coelomic fluid is occasionally shed through the dorsal pores of the Earth-worm.

In spite of the fact that such an in-taking and out-shedding of fluid would not, were it capable of demonstration in the Mollusca, stand as an isolated example of a somewhat startling physiological process — I have been led to entertain the strongest doubts as to its occurrence in Mollusca ever since I ascertained the existence of Haemoglobin in the plasma of the blood-fluid of the Gastropod *Planorbis* and of oval nucleated corpuscles richly charged with Haemoglobin in the blood of the Lamellibranch — *Solen legumen*.

An examination of the living specimens of *Solen legumen* made by me at Naples in 1872 was absolutely convincing as to the fact that in that Lamellibranch the blood-fluid is under no circumstances shed from any pores or apertures in the animal's body, so long as the surface is uninjured.

It was equally conclusive as to the fact that complete distension of the foot is produced in that animal without any admission of water to the vascular system, by the simple mechanism of a rapid flow of the deep-red-coloured blood from the mantle and body of the Lamellibranch into its foot.

It was easy to observe the to-and-fro movement of the blood when a specimen of *Solen legumen* was taken out of the water and held in the hand, owing to the deep red colour of the blood caused by its corpuscles. The whole vascular system can be readily traced in this Lamellibranch owing to the transparency of the tissues and the red colour of the blood.

With regard to the Gastropoda — the same kind of evidence is afforded by *Planorbis corneus*. The red-coloured haemoglobinous fluid is under no circumstances shed from the body of that animal unless its surface is wounded. Similarly there is no evidence of a dilution of the red-coloured fluid (such as would be afforded by its acquiring a paler tint) when the *Planorbis* is made to expand and retract its foot repeatedly. Were water admitted to the blood in the act of expansion of the foot, the repetition of this act would necessarily lead to a dilution of the haemoglobin and a diminution of the red colour of the blood-fluid.

2) The question of the out-pouring of the vascular fluid of Molluscs must be treated as distinct from that of the introduction of water through pores on the surface into the blood-system.

It is now maintained by those who hold that the former phenomenon does in some way occur — that the channel by which the blood-fluid makes its escape is from the pericardium through the reno-pericardial pores. A fact of fundamental importance is assumed in this view, namely that the pericardium of Molluscs is part of the general vascular system and contains blood. I have satisfied myself that this is not the case in *Solen legumen*. According to the observations of Penrose (Brit. Assoc. Reports 1882) and more recently of Bourne the pericardium of that Lamellibranch never contains the red-coloured blood, but it is occupied by a colourless fluid.

The current statements that in *Anodon* the pericardium communicates with the blood-vascular spaces by means of veins — also appear to me to be erroneous. I can not admit, after careful examination of the pericardium of *Anodon* by means of silver-staining, and other methods, that there are any veins opening into it.

On the whole it appears to me that there is no sufficient evidence that the pericardium of Molluscs is in any case (except perhaps the *Neomeniae*) a blood-space. Accordingly the blood can not escape through it and the renal organs to the exterior.

3) As to the introduction of water into the vascular system by pores in the foot, now maintained especially by Griesbach, there is, as in the case of the supposed out-shedding of the blood, not only a want of evidence that the process takes place at all, but also a want of evidence that the pores by which it is supposed to be effected have any existence. Five years ago I examined very carefully complete series of transverse sections through the foot of *Anodon* and of *Solen* and could find no such pores as have from time to time been described, nor any break in the epithelial clothing of the foot which could serve as an entrance to the sub-epithelial vascular spaces.

If Dr. Griesbach desires to establish his statements as to the admission of water into the vascular system of Lamellibranchs by pores in the foot, he must shew fully and clearly in a manner convincing to the histologist that such pores exist. He has done nothing in this direction at present which can be regarded as tending even in a small degree to prove that there is any reality in his suppositions. Also he must bring better evidence of the entrance of fluid by pores into the vascular spaces of the foot, than is afforded by the diffusion of a soluble colouring matter. He has found that finely divided coloured powder can not be made to enter the vascular system through the surface of the foot. Until he can shew either that such powdered colouring matter can enter or that there are demonstrable pores on the foot leading to the vascular system, it seems to be unreasonable in the face

of the facts, which I have cited above, as to *Solen legumen* and *Planorbis corneus*, to entertain any longer the expectation that the view advocated by Dr. Griesbach may prove to have any basis in fact.

March, 22.

5. Nachträgliche Bemerkung über Amphisbaena Strauchi v. Bedr.

Von Dr. J. v. Bedriaga.

eingeg. 31. März 1884.

In meiner neuerdings im Archiv für Naturgeschichte 1884, I, p. 23 veröffentlichten Abhandlung über *Amphisbaena cinerea* Vand. und *A. Strauchi* v. Bedr. habe ich die Vermuthung ausgesprochen, daß die in Constantinopel, Xanthus, Magnesia und Arsus constatirten Doppelschleichen nichts Anderes sein können, als *Amphisbaena Strauchi*. Letzthin habe ich die Wiener angeblichen *A. cinerea* aus Xanthus, Magnesia, Arsus und Creta und die Heidelberger »*A. cinerea*« aus Constantinopel (No. 206) untersucht und gefunden, daß dieselben zweifelsohne meiner Art »*Strauchi*« angehören.

Nizza, den 25. März 1884.

6. Vorläufige Mittheilungen über den Bau der Echinodermen.

Von Dr. Carl F. Jickeli in Jena.

eingeg. 1. April 1884.

Den Mittheilungen, welche ich hier zu veröffentlichen beginne, ist eine längere Beschäftigung mit dem Gegenstande vorausgegangen. Ziel der Untersuchung war schon von Anfang auf Grund histiologischer Analyse die Deutung der Organe zu versuchen und auf diesem Wege zum morphologischen Verständnis der Echinodermen zu gelangen. Im Allgemeinen hat die Untersuchung eine hier besonders mühsame histiologische Untersuchung bis jetzt weniger angestrebt, vielmehr bei der Deutung der Organe und Organsysteme allgemeinere scheinbar sehr gefestigte morphologische Gesichtspuncte den Ausschlag geben lassen.

1) Über das Nervensystem und die Sinnesorgane der *Comatula mediterranea*.

Im Kelch der *Comatula* findet sich eine Gewebsmasse, welche das sogenannte gekammerte Organ umhüllt und sich von da durch die Kalkglieder der Arme bis in die Pinnulae und eben so in die Cirrhen fortsetzt. Noch vor bald zwanzig Jahren hat W. B. Carpenter[1]

[1] Philos. Trans. Roy. Soc. London. Vol. 156.