of perylene itself is very high, presumably more than 10^{22} ohm-cm., the low resistivity or the high conductivity of the complex reported here must be due to some particular electron state following formation of the complex.

However, the complexes studied here are themselves not stable. The perylene–bromine complex slowly changes to dibromoperylene, evolving hydrogen bromide. The dibromoperylene–bromine complex seems to be more stable than the perylene complex, but it is still not completely stable and its resistivity also increases gradually. Whether there is a complex which is stable with good conductance is not yet clear.

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Pigmentation of the Jellyfish, *Pelagia noctiluca*

THE striking pigmentation of a large form of the purple-striped Scyphomedusan *Pelagia noctiluca* (Forskål), which is encountered occasionally in the coastal waters of California, involves three main pigments—magenta, brown and blue.

The blue is found in cells of the exumbrellar epidermis and the gonadial endoderm, as large rounded inclusions measuring up to 7 μ in diameter. It is found also in the lips. When fresh, the gonadial pigment shows absorption maxima in the visible range at 632·5, 590 and 560 mμ, but it is unstable, changing rapidly to a reddish-orange colour on treatment with boiling water, ethanol or formaldehyde. When extracted from autolysed tissue, the pigment exhibits a shift of its absorption maxima to 620, 577 and 545 mμ. The blue pigment of the exumbrellar epidermis, though appearing similar histologically, shows a different absorption spectrum, with a single broad maximum in the visible region at 545–550 mμ. The pigment from the lips is similar. All were rapidly attacked by trypsin, becoming cloudy orange, while the absorption maxima shifted progressively towards the blue, eventually disappearing from the visible region.

The brown pigment occurs in the exumbrellar epidermis, the mesoglœa and in the gonadial endoderm. It is stable and shows no absorption maximum, but a steadily increasing absorption towards the ultra-violet. In size and disposition, the granules resemble those of the magenta pigment.

The magenta pigment is predominant, and in the exumbrella is exclusively extracellular, being found in the superficial layers of the mesoglœa. It occurs as ellipsoidal granules 0·2–0·6 μ in length, either free or associated with coloured or colourless spheroids measuring some 3 μ in length, in a fashion reminiscent of the melanin granules in *Diadema*[1] and *Holothuria*[2]. Its chemical properties have been studied in some detail.

Although soluble in water, dilute acids and alkalis, the magenta pigment is insoluble in several organic solvents. It is non-dialysable, and the colour does not change when the pigment is dissolved in phosphate buffers from *p*H 10·0 down to weakly acidic values. When dissolved in buffer at *p*H 9·0, it shows a single rounded absorption maximum in the visible region at 490 mμ, which moves progressively toward the shorter wave-lengths when the pigment is hydrolysed by alkali or trypsin, or is extracted from autolysing tissue. After such treatment the pigment becomes brown, showing an absorption spectrum with no peaks, but with a steadily increasing absorption toward the shorter wave-lengths. These properties indicate a chromoprotein.

Prolonged hydrolysis with trypsin yields a deep reddish-brown chromogen which is precipitated by dilute alkali and, after washing and redissolving in dilute hydrochloric acid, shows a maximum absorption at 380 mμ. It is insoluble in a wide variety of organic solvents, is decolorized by the combined action of zinc dust, sodium acetate and acetic anhydride, and reduces ammoniacal solutions of silver nitrate. It thus behaves somewhat like a melanoid; unlike the common melanins, however, this pigment contains no sulphur.

Further tests indicated that the pigment contains nitrogen and a substituted phenol, but no aldehyde or carbohydrate groupings. It gave no reactions for proteins, tyrosine, tryptophan, arginine or other α-amino-acids or purines. The chromogen (known to be tryptophan-free) gave, after treatment with fused potassium hydroxide, a clear positive Ehrlich's reaction for the indole grouping, but no pyrrole reaction on roasting. The colour which developed in the indole reaction, when compared spectrophotometrically with that given by melanin from black feathers or by pure tryptophan, showed closely similar absorption spectra with maxima in the range 530–540 mμ.

These biochromes from *Pelagia* are sharply distinguished from the 'pelageine' described (from an unidentified species) by Griffiths and Platt[3]; yet in certain respects they are like some of the scyphozoan pigments described by earlier workers. Such findings were reviewed by Fox and Pantin[4], who pointed out that typical melanism is rare in cœlenterates, and is recognized in only a few of the Anthozoa. Certainly no clear evidence has yet been obtained for the existence of tyrosinase in breis from either coloured or colourless portions of this medusa, using both monohydric and polyhydric phenols as buffered substrates.

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