

Larvale Speicheldrüsen-Chromosomen von *Drosophila melanogaster*. a, 72 h Larve zeigt Grösse zur Zeit der Implantation. b, Vorpuppen-Kontrolle: Maximalgrösse. c, Nach 21-tägiger Kultur im Adultmilieu. d, Nach 50-tägiger Kultur im Adultmilieu. (Vergr. 620 \times für alle Aufnahmen.)

Wir können zwischen diesen beiden Möglichkeiten vorläufig nicht entscheiden. Eine in Adultrichtung fortschreitende Morphogenese des Imaginalringes konnte nie festgestellt werden. Wie BODENSTEIN⁴ gezeigt hat, erfolgt diese Differenzierung nur, wenn zusätzlich zur Speicheldrüse noch eine larvale Ringdrüse in den Adultwirt implantiert wird.

females. Under such conditions, the giant chromosomes reach not only the normal and maximal polytaenic size but in several cases, and after prolonged culture *in vivo*, cells are found which contain 'supergiant chromosomes'.

E. HADORN, W. GEHRING und M. STAUB

Summary. Larval salivary glands of the early third instar have been transplanted into the abdomen of adult

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Bipartite Nature of the Pituitary Gland in *Acridotheres tristis*, Linnaeus

The pituitary gland in the bird *A. tristis*, Linn. is elongated and roughly oval in outline, measuring 3 mm \times 2.3 mm in males and 4 mm \times 2.5 mm in females. The gland is symmetrically disposed in an antero-posterior plane just behind the optic-chiasma and is completely covered with meningeal covering. If these covers are removed carefully different parts of the gland, viz. the pars glandularis, the pars posterior and the pars tuberalis, can be made out.

Two types of acidophils, one basophil and a chromophobe cell are observed in microsections at 6–8 μ of the

gland fixed in Zenker's fluid and stained with Mallory's, Cleveland-Wolfe or PAS methyl blue Orange G. The acidophils are concentrated towards the periphery of the gland whereas basophils and the chromophobe cells are distributed in the centre of the pars glandularis. Only one type of basophil cell, i.e. PAS positive purple, is present; probably the birds sacrificed belonged reproductively to a season in which the PAS positive red cells are not present. Recently WINGSTRAND¹ has reported a similar phenomenon in a wide variety of birds including species

¹ K. G. WINGSTRAND, *The Structure and Development in Avian Pituitary Gland* (Gleerup, Lund, Sweden 1951).

from Struthioniformes to Passerines; others¹⁻⁶ have also described similar distribution in their studies in avian pituitary gland, except HERRING⁷ who has observed deep staining granular cells in the anterior two-thirds of the pars glandularis and clear cells in the posterior third part, and TILNEY⁸ who found central acidophils and peripheral basophils in chicken. RAHN³ has divided the pars glandularis into two lobes on the basis of change of cell-types and their distribution and designated them as the 'cephalic' and the 'caudal' lobes in the chick. The cephalic lobe usually contains light staining acidophils with their concentration toward periphery of the lobe, whereas the caudal lobe lying nearer the infundibular process has dark staining acidophils and thus provides demarcation of the boundary line of the two lobes. Almost all workers who described the bipartite nature of the avian pituitary gland have, however, referred to a similar type of separation. While studying cytomorphology of the pituitary gland in a few Indian birds, in *A. tristis*, Linn. a connective tissue strand is observed traversing the pars glandularis through its periphery (Figure 1) thereby dividing it into two separate lobes named the cephalic and the caudal in accordance with previous literature. It is evident from the review of the literature that such a type of separation of the two lobes in avian pituitary gland is hitherto not described.

Colloidal secretions surrounded by degranulated cells were numerably observed in the pars glandularis and the zona tuberalis. The zona tuberalis connects the pars glandularis with pars tuberalis—a character resembling

more the mammalian pars anterior (Figure 2). The colloids are basic in nature and thus stain blue with Mallory's and Cleveland-Wolfe stains and give positive colour with PAS methyl blue Orange G.



Fig. 2. A part of pars glandularis. Note zona tuberalis (zt), acidophils (ac), basophil (bs) and colloidal secretions (col).

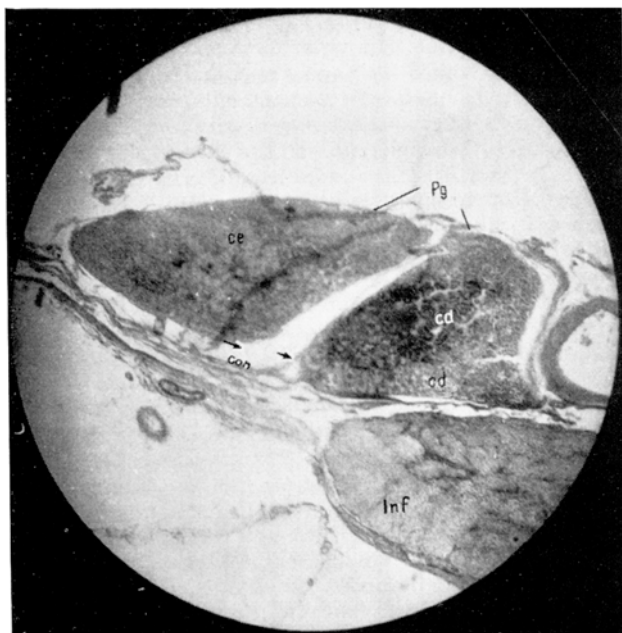


Fig. 1. Pars glandularis (pg) and Infundibular (inf) process. Note separation of the 'Cephalic' (ce) and 'Caudal' (cd) lobes by a connective tissue (con).

Flamingoes Raise their Young on a Liquid Containing Blood

Since 1958 seventeen chicks have been raised in the Basle Zoo flamingo colony, which is composed of all three races of *Phoenicopterus ruber*. In 1962 the juice with

Résumé. Les oiseaux femelles possèdent une glande pituitaire plus grande que celle des mâles. La glande est couverte entièrement par les couvertures meningeées. Deux types d'acrophiles, un basophile violet et PAS positif, et puis une cellule chromophobe ont été observés. Les lobes céphaliques et la caudale sont séparés par un toron de tissu connectif, d'un caractère inconnu jusqu'ici dans la bipartite de la glande pituitaire des oiseaux. Les sécrétions colloïdales de caractère basique sont nombreux dans la pars glandularis et dans la zona tuberalis.

K. G. PUROHIT⁹

Animal Physiology Section, Central Arid Zone Research Institute, Jodhpur (India), January 16, 1963.

¹ F. PAYNE, Biol. Bull. 82, 79 (1942).

² F. PAYNE, Anat. Rec. 96, 77 (1946).

³ H. RAHN, J. Morphol. 64, 483 (1939).

⁴ H. RAHN and B. T. PAINTER, Anat. Rec. 79, 297 (1941).

⁵ J. P. SCHOOLEY, Cold Spring Harbor Symposium on Quantitative Biology, vol. 5 (1937).

⁶ P. T. HERRING, Quart. J. exp. Physiol. 6, 73 (1913).

⁷ F. TILNEY, Amer. Anat. Mem. 2, 1 (1911).

⁸ My thanks are due to Prof. L. S. RAMASWAMI for suggesting the problem and for painstaking guidance during the course of work at Department of Zoology, University of Rajasthan, Jodhpur (India).

which both parents feed their single chick was analysed for the first time. Three analyses were performed (I-III) on juice taken from the crops of freshly fed 9-17 day-old chicks, and drops of juice obtained direct from an adult bird during the feeding act were submitted to histological examination (IV). The juice is of a watery consistency