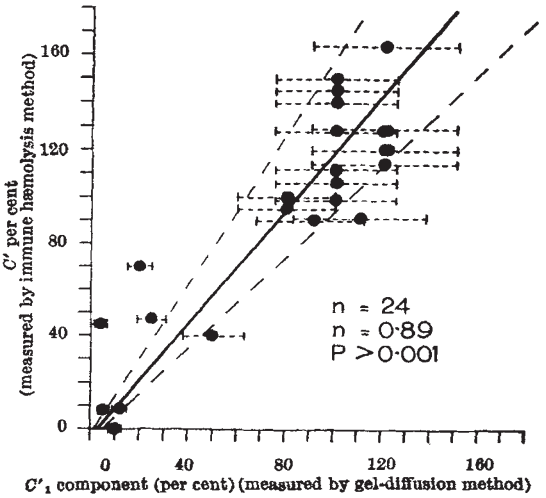

Fig. 1. Continuous line, calculated regression; interrupted lines, 25 per cent error limits; percentage values of arbitrary 'normal serum'

that, in this patient at least, the half-life of C'_1 was about four days. (*b*) *Case Rd :* A case of rheumatoid arthritis whose γ-globulin was 1·75 gm. per cent. Sera from such cases are often anti-complementary; the complement by the hæmolytic method was read as 9 per cent and the serum was shown to be moderately anti-complementary. The immuno-diffusion method, however, gave a reading of 100 per cent for C'_1. This result, in the only anti-complementary serum we have so far tested, suggests that a serological method may have some advantages in such circumstances.

H. A. Ellis
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Prothoracic Glands in *Tenebrio molitor* L. (Coleoptera : Tenebrionidae)

Williams[1] was unable to locate prothoracic glands in the larvæ of Coleoptera, but later, Stellwaag-Kittler[2] claimed to have found them in *Tenebrio molitor*, and Núnez[3] described them in the carabid *Anisotarsus cupripennis*. In *Tenebrio*, Stellwaag-Kittler reported them as a pair of slender unbranched structures, each running anteriorly along a trachea from the prothoracic spiracle; on entering the head they converge, pass beneath the nerve cord and become attenuated. Closer examination of these relatively conspicuous structures in mature larvæ of *T. molitor* has now shown that each is continued anteriorly into a separate duct; the two ducts open separately, one on each side of the hypopharynx. In fact, these structures are evidently the 'salivary glands' which have previously been reported in some tenebrionid larvæ[4].

The true prothoracic glands of *T. molitor* are very small compact branched organs situated near the neck, where they lie a little behind the dorsal commissure, joining the paired dorsal tracheal trunks which run into the head from the prothoracic spiracles (Fig. 1). Because of their delicate, transparent appearance they are only seen after *intra vitam*

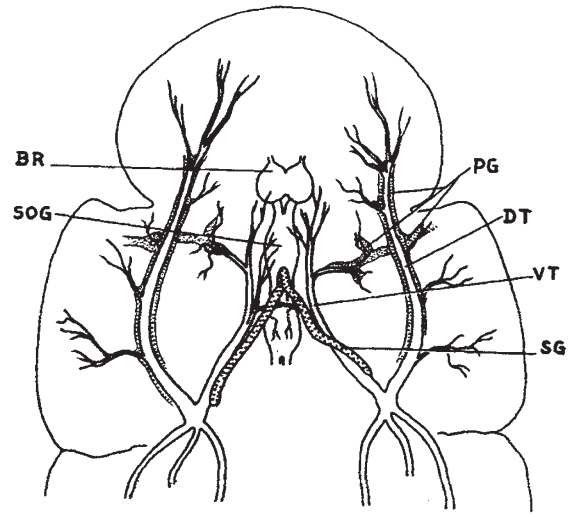

Fig. 1. Prothoracic glands of *T. molitor in situ* (dorsal view). *BR*, brain; *DT*, dorsal tracheal trunk; *PG*, prothoracic gland; *SG*, salivary gland; *SOG*, sub-œsophageal ganglion *VT*, ventral tracheal trunk

staining with methylene blue. The fully developed prothoracic gland consists of a transverse band of cells which usually gives rise to a small anteriorly directed lobe and which enters into an association with the dorsal tracheal trunk. Medially, the transverse band is intimately attached to the branches of a conspicuous trachea given off laterally outwards by the ventral tracheal trunk. Running laterally, it spreads as a web between these fine tracheal branches and turns upwards to become associated with the dorsal trunk. From this point, it extends laterally again and ends indistinctly among fat body, muscles and tracheæ. The small spindle-shaped anterior lobe, which is sometimes absent, arises near the middle of the transverse band and is attached by its pointed end to a fine branch of the trachea arising from the ventral trunk. When well developed, cells of the gland may also spread as a thin sheath over the dorsal tracheal trunk, which then assumes a deeper colour in preparations vitally stained with methylene blue. The gland does not form an investment over the ventral tracheal trunk. Unlike the syncytial prothoracic glands described in most other insects, distinct cell-boundaries may be seen in *Tenebrio* and were also figured by Núnez in *Anisotarsus*.

A study of the histological changes in these glands during the development of *T. molitor* is now in progress.

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Effect of Lime on the Production of a Toadstool (*Omphalia maura* (Fr.) Gill.)

In January 1956, as part of a wider series of experiments, a rectangular plot 10 yards × 20 yards was pegged out in each of three plantations of Scots fir (*Pinus sylvestris* L.), and dressed with lime at the