vitellogenesis, the oocytes increase in dimension, become oval or oblong, followed by the stretching of the follicular epithelial cells so as to cover the entire oocyte.

In *C. indicus*, such a trophocyte and associated nutritive link are lacking (figure 1B) and the yolk formation in the primary oocyte occurs while in the vitellarium. Since nurse cells are lacking, nutritive substance from the haemolymph is mediated through the enlarged follicular epithelial cells around the oocyte (figure 1C). The chromatin network of the oocyte appears diffused, spreading throughout the nucleus. The enlarged nucleus of the primary oocyte attains its maximum size prior to yolk deposition. The well-developed oval oocytes with plenty of yolk reserves are covered with a highly stretched and partially disintegrating follicular epithelium, with a thin inner vitelline membrane immediately inside the follicular epithelium.

In insects with panoistic ovaries yolk deposition in the primary oocyte takes place while in the vitellarium, and nutritive substances from the haemolymph are mediated only through the activated follicular epithelial cells surrounding the oocytes in the vitellogenic phase[8-13]. Strangely however, in the case of *D. gracilipes*, instead of the involvement of the whole follicular epithelium one of the apical cells becomes actively involved in the process of supplying nutrient substances to the growing oocyte, thus acting as a trophocyte. The ovary of *D. gracilipes* therefore brings to light a unique and exceptional case so far unknown among Thysanoptera, wherein the specialization of a single follicular epithelial cell as a trophocyte in every developing oocyte in an ovariole, becomes actively engaged in the deposition of nutrient substances.

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NEWS

FUEL-EFFICIENT SATELLITE

A new propulsion system for space satellites using a jet of high energy ionised particles is being investigated in a series of programmes co-ordinated by Britain's new National Space Centre. Here an ion thruster is inspected prior to installation in a test facility at the United Kingdom Atomic Energy Authority's Culham Laboratory in Oxfordshire.

Particles of the rare gases xenon, krypton and argon are used because they are inert and, unlike the mercury and caesium tested in previous ion thrusters, will not contaminate or damage the spacecraft on which they are mounted.

The project will culminate in the production of a standard electric thruster system capable of providing station-keeping propulsion for all communication satellites. Present-day satellites use chemical rockets to maintain their position in orbit, and communication satellites in geostationary orbit need to correct for many disturbances including the effects of the sun and moon.

The new type of thruster would lead to fuel savings equivalent to a 20 per cent increase in the payload and works by producing positively charged ions in the rocket. These ions are then accelerated to high velocities by electric fields and ejected at velocities of 30 – 40 kilometres a second, ten times that in the exhaust from a chemical rocket. [*Spectrum* — British Science News, No. 198, 1986, (British Information Services, British High Commission, New Delhi 110 021)].