

FIG 2. Electron micrograph showing virus particles.

Present studies indicate that *S. nigrum* harbours a non-persistent, aphid transmitted virus having flexuous rod-shaped particles. On the basis of transmission tests, serology and electron microscopy, the virus under investigation stands very close to PVY. On the other hand, *D. stramonium*, a host of the present virus is not susceptible to PVY while *C. amaranticolor*, a host of the latter, could not be injected by virus under investigation. Symptoms of PVY on *S. nigrum*, although apparent in the beginning disappear later on making the plants a symptomless carrier<sup>7</sup>. In the present case, however, the symptoms on *S. nigrum* persist till the plants survive. Since separation of different strains of PVY is generally based on substantial differences in host range and symptoms, the present virus is identified as a distinct isolate of PVY designated as PVY, *S. nigrum* strain. The role of the weed *S. nigrum*, as a source of primary inoculum for infection of solanaceous hosts seems to be vital and as such presence of these plants among crop plants should be viewed with caution by the growers.

Authors gratefully acknowledge the cooperation of the Electron Microscopy Division of CDRI, Lucknow, for taking the electron micrograph, Dr. S. M. Pal Khurana of CPRI, Simla, for serological tests and Prof. T. S. Sadasivan for going through the manuscript.

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June 2, 1979.

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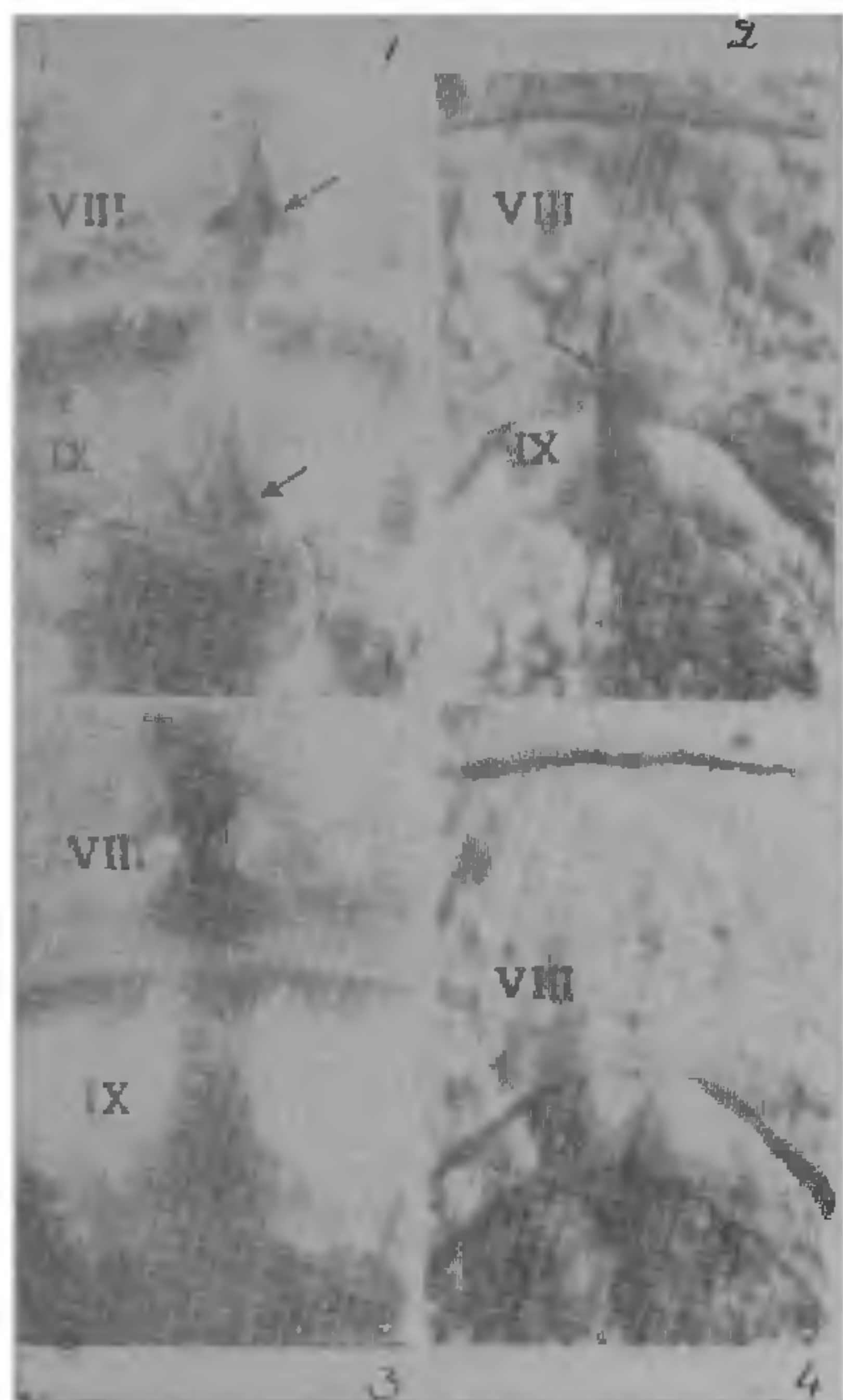
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#### EXTERNAL SEXUAL CHARACTERS IN THE JUVENILE STAGES OF THE LEMON-BUTTERFLY, *PAPILIO DEMOLEUS*

DURING the course of our studies on the development and metamorphosis of the reproductive organs in *Papilio demoleus*, we felt the need to identify the sexes of the fifth (ultimate) instar larvae and pupae and were able to discover external sexual characters that not only provide a fairly accurate means of sexing these stages in this species but also differ in essential respects from those described in other Lepidoptera<sup>1-5</sup>.

The female larva of *P. demoleus* bears small triangular and transparent cuticular areas, a pair in each of the 8th and 9th abdominal sternites (Fig. 1). The areas are flat without pits or invaginations and transparent without any pigmentation. The female pupa, on the other hand, bears a small narrow vertical furrow or slot beginning in the posterior-half of the 8th abdominal sternite and extending on the 9th sternite (Fig. 2). The male larva (Fig. 3) and pupa (Fig. 4) lack similar, infact, any sexual marking and have to be recognised by elimination of the features present in the female. The above characters permitted almost a 100% accuracy in the identification of the sexes of the juvenile stages in the 200 specimens that were examined.

Stehr and Cook<sup>1</sup> and Hinks and Byres<sup>2</sup> describe a single median pit on the 9th abdominal sternite and Kean and Platt<sup>3</sup>, a pair of bristle-bearing minute bumps on the 8th abdominal sternite of the male larva. While the former authors<sup>1, 2</sup> do not mention any distinguishing features in the case of the male pupa, the latter ones<sup>3</sup> describe a pair of swellings on the 9th abdominal sternite and Stammeshaus<sup>4</sup> and Lal and Chandra<sup>5</sup>, a genital pore on the same segment. The male larva and pupa of the present insect differ from the above cases in lacking all positive external sexual characters. In the female larva, whereas Stehr and Cook<sup>1</sup> and Hinks and Byres<sup>2</sup> find a pair of pits each on the 8th and 9th abdominal sternites, Kean and Platt<sup>3</sup> find a pair of dark spots (chitin windows) on the 8th abdominal sternite alone. In case of the female pupa, while Kean and Platt<sup>3</sup> describe a slot on the 8th abdominal sternite extending upto the 9th abdominal sternite, Stammeshaus<sup>4</sup> and Lal and Chandra<sup>5</sup> find a



FIGS. 194. Fig. 1. Triangular and transparent cuticular areas (arrows) in the 8th and 9th abdominal sternites of the female larva. Fig. 2. A vertical furrow (arrow) on the posterior half of the 8th and 9th abdominal sternites of the female pupa. Figs. 3. and 4. The 8th and 9th abdominal sternites of the male larva (Fig. 3) and pupa (Fig. 4) showing no sexual markings on them.

genital pore on the 8th abdominal sternite and an oviducal pore on the 9th abdominal sternite. The female larva of the present insect resemble the above cases only in having their 8th and 9th abdominal sternites associated with the external sexual characters but differ from both in having flat transparent areas instead of the pits or dark areas. Likewise, the female pupa of the present insect resembles the condition described by Kean and Platt<sup>3</sup> and not that described by Stammeshaus<sup>4</sup> and Lal and Chandra<sup>5</sup>.

From the foregoing it is clear that the external sexual characters in the juvenile stages of different species of Lepidoptera could be very variable and need to be ascertained individually in each case.

We are thankful to Prof. C. J. Dominic for providing laboratory facilities and to the UGC for financial support.

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 May 2, 1979.

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**PLECTONCHUS CUCUMIS SP. N.**  
 (NEMATODA, PANAGROLAIMIDAE) FROM  
*CUCUMIS MELO* VAR. *PHUT*

DURING the survey, for helminth contamination of fruits and vegetables undertaken at Jodhpur, Rajasthan, a species of *Plectonchus* hitherto undescribed was found in the slimy rotten part of the fruit of *Cucumis melo* var. *phut*.

*Plectonchus cucumis* spn. (Fig. 1 A-D).

Holotype (female): L = 1.12 mm; a = 16; b = 6; c = 9; V = 71.4.

Paratype (females, n = 6): L = 0.90-1.09 (0.99) mm; a = 12.8-15.5 (14.1); b = 5.2-6.4 (5.8); c = 6.9-8.3 (7.6); V = 71.5-73.4 (72.4).

Body stout. Cuticle 2  $\mu$  thick with fine longitudinal striations. Head with three conical lips not offset, each with one apical papilla. Stoma short cylindrical, 10-12  $\mu$  long with poorly developed rhabdions (in one specimen only cheilorhabdions fairly sclerotized; in second, pro-, meso-, and meta-rhabdions slightly sclerotized; and in remaining rhabdions not distinct).

Corpus nearly cylindrical, 123-125  $\mu$  long, isthmus short, 20-23  $\mu$  and terminal bulb valvated 31-32 \times 28-29  $\mu$  in size. Nerve ring encircles the middle of isthmus. Excretory pore not visible. Intestine transparent, moderately broad with thick granular walls and a narrow lumen. Rectum 43-35  $\mu$  long. Vulva post-equatorial. Ovary single, prodelphic and reflexed, about 110-112  $\mu$  long. Uterus with 8-14 coilings. Vagina short, 18-20  $\mu$  long. Tail conoid.

Male not known.