saepe curvata, transverse 3–20-septata, pallide olivacea vel olivaceo-brunneola, laevia, plus minusve crassi-tunicata, 36–130 (75) × 4·5–9·5 (7·5) μm.

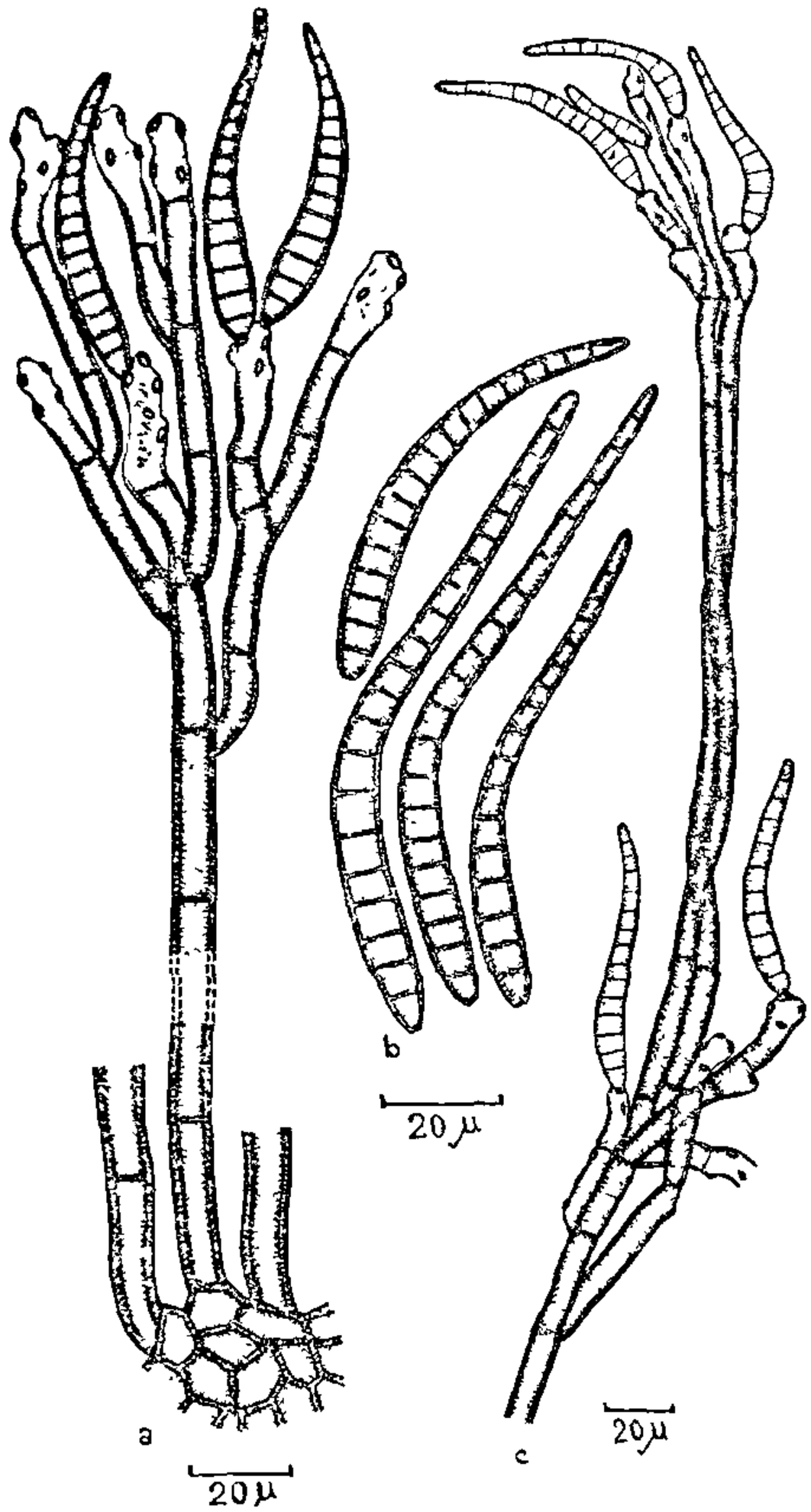

FIG. 1. *Periconiella longispara* sp. nov.
a, a conidiophore with stipe and head; *b*, conidia; *c*, a proliferating conidiophore.

In foliis vivis *Litseae chinensis* Lamk. leg. S. Singh, 118 typum, in herb. IMI sub numero 200061 conservatum.

One of the most important and distinguishing features of this collection is the formation of the longest conidia (36–130 × 4·5–9·5 μm) with an unusually large number of septa (3–20) among the species of the genus known so far. Further, this species does not resemble any of the known species of the genus *Periconiella* in occasional proliferation of the heads into secondary and tertiary stipes with more or less fertile heads.

This species resembles *Periconiella rapaneae* Ellis[2] described on *Rapaneae* sp., only in the shape of conidia. This resemblance, however, merits minor concern to prove the present fungus conspecific with *P. rapaneae*.

The unusually large size and the number of septa in the conidia and the occasional proliferation of the branches of primary heads into secondary and tertiary stipes bearing fertile heads in the present collection warrant its description as a new species.

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POLLINATION BIOLOGY OF *CALOTROPIS GIGANTEA* (L.) R BR.

SPECIES of *Xylocopa*, commonly known as carpenter bees have been recognised as active pollinators of *Calotropis gigantea*. Pijl[1] recorded that *Xylocopa latipes* was an established pollinator. Recently Wanntrop[2] has pointed out that *C. gigantea* is pollinated by several insects of which *Xylocopa tenuiscapa* appears to be the most efficient. The present study was taken up to understand the species of *Xylocopa* that are involved in the pllination of *C. gigantea* in two distant localities. The account is based on the observations made in several populations of *C. gigantea* growing around Kukkanahally tank near Manasagangotri, Mysore and near Srinivasapur, Kolar District.

Two insect species are noted to effect pollination of *C. gigantea*, in Kukkanahally tank area; they are *Xylocopa dissimilis* Lepel. (Figs. 1 to 3) and *Xylocopa collaris* Lepel. (Fig. 4) (Hymenoptera, Apidae). Both taxa are active between 0700 to 1700 hrs on bright sunny days. Species of *X. collaris* arrived in swarms while *X. dissimilis* visited individually and on several occasions it has been noted that *X. collaris* is a major pollinating agent of *C. gigantea*, near Kukkanahally tank area, while in Srinivasapur area *Xylocopa dissimilis* alone functioned as the pollinating agent.

The bee alights on a flower in a crouching position and its wings keep fluttering so long as it stays on the flower. With regard to *X. dissimilis*, the head of the

FIGS. 1–4. Fig. 1. *Xylocopa dissimilis* Male, ×3. Fig. 2. *X. dissimilis* Female, × 3. Fig. 3. Tibia of Fig. 1 with pollinia, × 15. Flg. 4. *X. collaris* Female, × 4. Arrow in figures shows the pollinia.

insect is poised on one side of the gynostegium and the abdomen on the other side, while the sternum almost resting on the top of the stigma. *X. collaris*, on the other hand, sits obliquely on one edge of the stigma and in this position the bee circumambulates one nectary to the other obliquely inserting its proboscis. In the process of circumambulation the insect shifts its legs, the bristels of the insect leg incidentally comb the stigmatic region removing the twin-pollinia which get interlocked with the bristles. In most cases the marginal bristles of the tibia carry pollinia. The pollinia gradually lose water and assume a parallel disposition (Fig. 3) and during subsequent visit of the insect to the flowers, the pollinia get transferred on to the stigma. The transfer of pollinia on to the receptive surface of the stigma occurs in two ways. A careful examination of flowers visited by insects has revealed that nearly two out of ten have entire twin-pollinia on the stigmatic surface while in a few others, had only the pollen sacs (bereft of other parts). An examination of insects that had pollinated revealed that only the translator apparatus was present amidst the bristles indicating the detachment of pollinia. In the former case, therefore, the pollination occurs due to the sliding down of pollinia from the bristels and in the latter it is due to the separation of pollinia proper from the translator apparatus.

A noteworthy feature is, insects which are hovering around the flowers alight only on the unvisited flowers. This observation confirms the view of Pijl[1] and Wanntrop[2] that the insects probably leave an indication as a scent mark on the flowers visited.

The above observations, indicate that there are two different insects—*X. dissimilis* and *X. collaris*—which actively effect pollination in *C. gigantea* in Kukkanahally tank area. Although, *X. dissimilis* visits individually carrying larger number of twin-pollinia, (Fig. 1) such a feature is also noted during pollination of *Asclepias syriaca*[3]. On the other hand, *X. collaris* carries a smaller number of pollinia, they are efficient enough to pollinate larger number of flowers, since swarms of them visit the flowers at a time. One other aspect to be noted here is that in *X. dissimilis* among three appendages of the body, it is the mesothoracic appendage that carries a larger number of pollinia. In Srinivasapur area our observation reveals that *X. dissimilis* is the sole pollinating agent that *Calotropis* has to depend on. However, in Kukkanahally tank area the pllination of *Calotropis* is performed both by *X. dissimilis* and *X. collaris*. Apparently *C. gigantea* is pollinated either exclusively by a single species of insect or by more than one depending upon the area in which the plant is growing and the availability of the pollinating insect(s) in that region. This confirms the conclusions of Faegri and Pijl[4].

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A NEW RECORD OF BACTERIAL WILT OF GINGER INCITED BY *PSEUDOMONAS SOLANACEARUM* E. F. SMITH FROM INDIA

GINGER plants (*Zingiber officinale* Rosc) growing at the Horticultural Research Station, Ambalavayal, Calicut District, Kerala, exhibited symptoms of yellowing and wilting during the monsoon months of 1978. Microscopic examination of the infected portions of the plants revealed the presence of bacteria, oozing out profusely from the cut ends.