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# INCIDENCE OF BYSSOCHLAMYS FULVA IN QUEENSLAND-GROWN CANNED STRAWBERRIES

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Spurgin (1964) reported an outbreak of spoilage in commercially canned strawberries in Queensland. The causative organism was tentatively identified as *Byssochlamys fulva* (Olliver and Smith 1933) because, although no perfect stage of the fungus was observed, the conidial stage was identical with descriptions of the same stage of *B. fulva* and tests indicated that ascospores with the same heat resistance as those of *B. fulva* were in fact present in the material under test.

Gillespy (personal communication 1963) stated that after a few subcultures on agar, *B. fulva* no longer goes to the perfect stage and suggested that further investigations be made on fresh isolates. Since some of the original spoiled canned material was still available at the laboratory, attempts were made to obtain a fresh isolate and a fresh pure culture was eventually obtained.

As the previous isolates had failed to produce ascospores on laboratory media (Spurgin 1964), syrup from the canned strawberries was used as the medium for ascospore production. After sterilization, this syrup had a pH of 3·42 and a sugar concentration of 34·8°Brix. The mould grew well on this medium at 28°C and the conidial fructification was identical with that described by Spurgin (1964). The ovate spores were 6 $\mu$ x 2·5 $\mu$ and formed in unbranched chains (Figure 1). No heat tolerance tests were carried out on this form.

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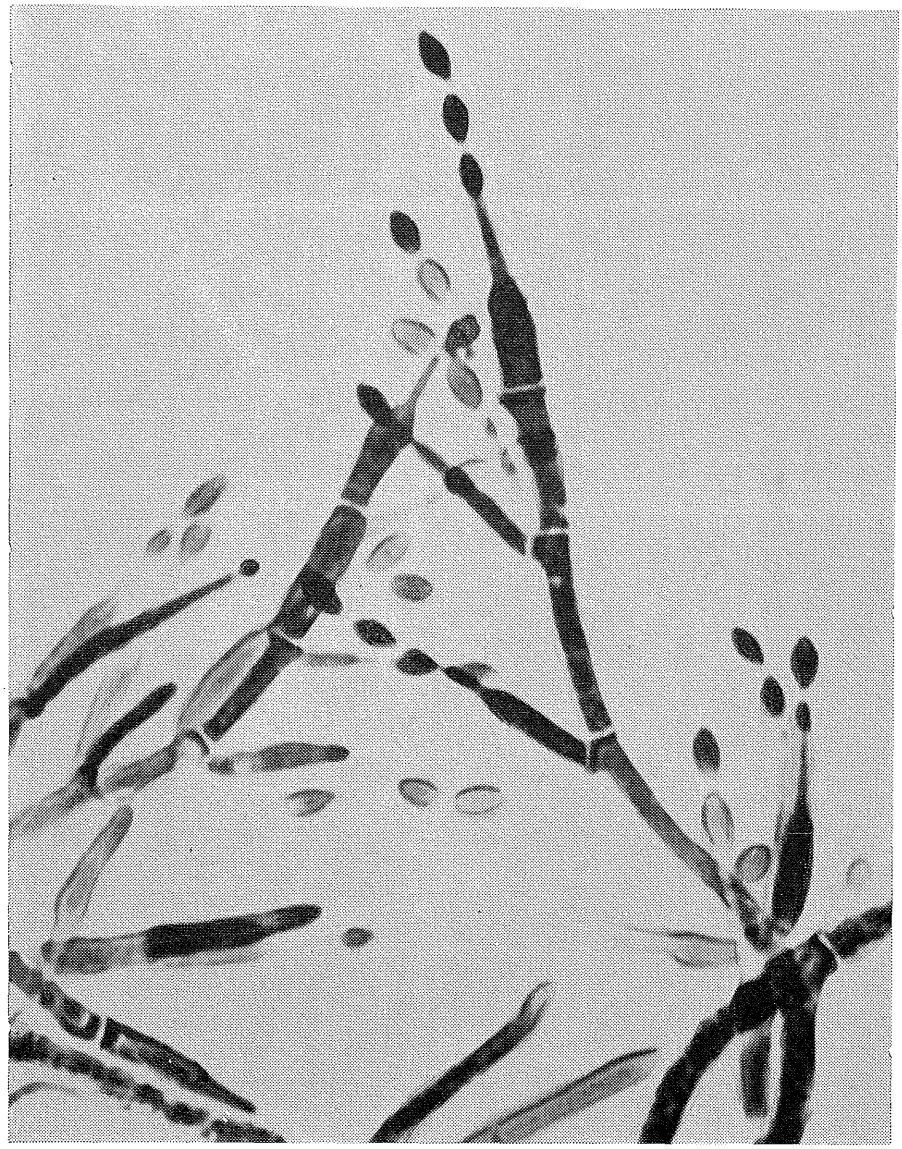

Fig. 1.—*Byssochlamys fulva*: conidial fructification. (x 1200).

The mould quickly formed a thick brownish-coloured mat over the surface of the medium and was examined periodically to see if there had been any ascospore formation. Examination after 10 days' incubation at 28°C revealed structures which fitted the description of asci of *B. fulva*. They consisted of clusters of spores with no peridium but their conformation was such that eight individual spores could rarely be distinguished. Figure 2 shows a typical example. The ascospores, which were larger than the conidia, had dimensions of $6\,\mu$ x $4{\cdot}0 - 4{\cdot}5\,\mu$.

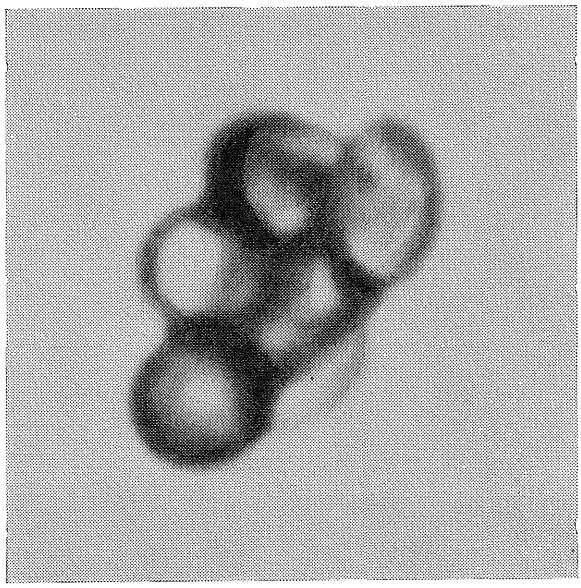

Fig. 2.—*Byssochlamys fulva*: typical ascus without a peridium. (x 3800).

To determine if the culture exhibited the heat resistance attributed to ascospores of *B. fulva,* heat tolerance tests were carried out in the medium. A suspension of a culture containing the ascospores was made using ·01% "Teepol" as a wetting agent; 1·0 ml of this suspension was then transferred to sterile stoppered Durham tubes mounted in a stand in a water-bath at the required temperature. When the tubes had been heated for the required time they were removed from the bath, cooled immediately in cold water, and their contents transferred to petri dishes and plated with potato sucrose agar (Olliver and Rendle 1934). The results of these tests (Tables 1-3) are comparable with those previously reported (Olliver and Rendle 1934; Gillespy 1938), and confirm the opinion that the fungus belongs to the genus *Byssochlamys.* The abundant production of conidia by the species examined and its buff coloration place it in the species *Byssochlamys fulva.*

**TABLE 1**

HEAT RESISTANCE OF ASCOSPORES (IN SYRUP) AT 88°C

| Time (min) | Sample | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 30 | + | + | + | + |
| 35 | + | + | — | — |
| 40 | + | + | — | — |

+ = Growth on potato dextrose agar.
— = No growth on potato dextrose agar.

**TABLE 2**

HEAT RESISTANCE OF ASCOSPORES (IN SYRUP) AT 91°C

| Time (min) | Sample | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 5 | + | + | + | + |
| 8 | + | + | + | + |
| 10 | + | + | + | + |
| 12 | + | + | + | − |
| 15 | + | + | + | − |
| 17 | − | − | − | − |

+ = Growth on potato dextrose agar.
− = No growth on potato dextrose agar.

**TABLE 3**

HEAT RESISTANCE OF ASCOSPORES (IN SYRUP) AT 95°C

| Time (sec) | Sample | |
|---|---|---|
| | 1 | 2 |
| 45 | + | − |
| 60 | + | + |
| 90 | − | − |
| 120 | − | − |

+ = Growth on potato dextrose agar.
− = No growth on potato dextrose agar.

## REFERENCES

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