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Beetle Remains from a Medieval Burial at St. Augustine's Canterbury.

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Beetle remains associated with a Medieval burial have been identified as Rhizophagus parallelocollis Gyll., the 'graveyard beetle'. The sub-fossil beetles were noted in the chasuble of Abbot Dygon, where they were apparently embedded in small green channels which contrasted with the brown-stained fabric of the vestment. These channels had the appearance of mould growth along their walls, a factor of probable significance in the beetle life-history. The beetles in the fabric were generally intact but further disarticulated remains, including elytra with an aedeagus and numbers of isolated sternites had previously been dissected from the vestment by Mr. J.Thorn. These sclerites proved to be from the same species.

Rhizophagus parallelocollis has occurred in numbers of Pleistocene and archaeological beetle assemblages, often where there is evidence of forest with decaying trees, and in its natural state, the species is probably a predator or a mould feeder in dead, rotten wood. As well as this dead wood habitat, modern collecting records also include vegetable refuse, fungi and, significantly corpses and carrion. There is some dispute among entomologists as to the beetle's food source in these habitats. Blair (1922) suggests that the species predates fly maggots feeding on the decaying corpse, whereas Palm (1959) favours the corpse itself as the food source. Horion (1960) believes that the beetle feeds directly on mould but he quotes other authors who cite the actual decaying coffin wood as providing nourishment for the beetle. The ecology of Rhizophagus has recently been summarised by Peacock (1977). Whatever the life-cycle of the species, its association with burials, which has earned it the common name 'graveyard' or 'churchyard beetle', provides one illustration of how man's activities have advantaged particular insect species. In this case the concentration of corpses, mould and mouldy wood and their abundant fly maggot fauna, has provided a widespread expansion of the species' natuaral dead tree habitat. Until recent historic times, it is probable that

graveyards eclipsed the natural habitats for R.parallelocollis and although its numbers have now declined with more stringent burial practices, compost provides another synanthropic or man-associated habitat favoured by this species (Johnson, 1963).

There are two previous records of R.parallelocollis from Medieval burials; those of Stafford (1971) and Buckland (1979). Much important data have been provided by the latter example, the 14th. century burial of Archbishop Greenfield Dr. Buckland's investigation of this burial indicated that the body had been interred in a sealed lead coffin which afforded little chance of insects entering after the burial. Despite this, several hundred specimens of R.parallelocollis together with other beetle remains were recorded from the coffin, which lead him to the conclusion that the beetle infestation had arisen from eggs laid while the coffin was exposed. Also, the absence of a wooden coffin and the lack of adult fly remains has enabled Dr. Buckland to suggest that fly maggots provided the beetle food source in the closed system of the coffin.

The examples of R.parallelocollis associated with Abbot Dygon may provide some evidence about his funeral. If, as in the case of Archbishop Greenfield, the infestation of the beetle arose from eggs laid directly on the body, this implies a period between death and interment suffieciently long to allow some decay of the tissues and initial attack by flies. This might have been provided by a lying-in-state ceremony of a few days, depending upon the seasonal temperatu It is almost certain that the Medieval churchyard supported large populations of the the species which would have entered the adjoining church. Although this conjecture is a likely explanation for the occurrence of the beetles associated with Abbot Dygon, it must be noted that R.parallelocollis is also known to enter buried coffins and this mode of infestation cannot be ruled out.

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