will pull the apparatus on its own side without effecting spiracular opening. This situation changes in the pupal stage. The anterior-half of the closing apparatus comes to fuse with the peritreme, a sclerite in the body wall surrounding the spiracular opening (orifice) due to the obliteration of the atrium and is thus rendered immobile. The ventral spiracular dilator which has its insertion on this part of the closing apparatus is thus rendered redundant and is therefore lost in the pupal stage. The question of the loss of the dorsal spiracular dilator in 1-day old adult can be answered only if we assume that the free posterior-half of the closing apparatus by this time acquires a degree of (intrinsic) elasticity that is adequate to open the spiracle by its own force. The assumption gains credence since it tends to explain the permanence of the spiracular occlusor. For, if this muscle were also to be lost, the intrinsic elasticity of the free half of the spiracular closing apparatus would keep the spiracles permanently open and thus destroy the spiracular regulatory mechanism.

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SEASONAL MORTALITY OF *DIADEGMA TRICHOPTILUS* (CAMERON) (HYMENOPTERA: ICHNEUMONIDAE), A LARVAL PARASITOID OF *EXELASTIS ATOMOSA* WALS DUE TO HYPERPARASITOIDS

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IN biological control, care must be taken to prevent the introduction of hyperparasitoids in fields and is based on the notion that hyperparasitoids may seriously affect the efficacy of primary parasitoids[1]. Keeping this in view the present work was carried out.

During a survey for hyperparasitoids in 1980–1983 in Marathwada, extensive cocoon collection of *Diadegma trichoptilus* (Cameron) (Hymenoptera: Ichneumonidae), a larval parasitoid of *Exelastis atomosa* Wals pest of pigeon pea (*Cajanus cajan*. Mill) was made. At laboratory condition (24 ± 11 °C, 55% R.H.) the cocoons were kept in 5 per test tube for adult emergence. The emerged parasitoids and hyperparasitoids were recorded.

The mortality of 2421 *D. trichoptilus* cocoons was due to three hyperparasitoids: (i) *Brachymeria* sp (Chalcidae); (ii) *Eurytoma* sp *braconidis* group (Eurytomidae); (iii) *Paraphylex* complex (Ichneumonidae).

The seasonal mortality averaged 4.94% in November, 33.20% in December and 62.90% in January. The hyperparasitoids appeared 1–2 weeks later than the parasitoid. The percentage of hyperparasitization increased with increase of parasitization by *D. trichoptilus*. In *Trioxys* (*Binodoxys*) *indicus* Subba Rao and Sharma, hyperparasitization declined due to fall in temperature and humidity and increased with rise of temperature[2]. In *Apanteles congregatus* (Say) hyperparasitization by *Hypopteromalus tabacum* (Fitch) increased during cold weather[3]. Similarly in the present study hyperparasitization increases with lowering of temperature. Hyperparasitization had a peak value of 62.9% in January but as the harvesting period of host crop approached, the emergence of hyperparasitoids stopped. This indicates that hyperparasitoids have entered in diapause. With *Cotesia orientalis* Chalikwar and Nikam similar results were noted[4].

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