



NESTING BEHAVIOUR OF POTTER WASP, DELTA PYRIFORME (FABRICIUS) (HYMENOPTERA: EUMENINAE) FROM THE KORADI REGION, DIST, NAGPUR, MAHARASHTRA

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ABSTRACT: The potter wasp *Delta pyriforme* (Fabricius) nest collected from different location of the koradi region dist., Nagpur, Maharashtra for gathered information about nesting behaviour and prey capturing habit. *Delta pyriforme* (Fabricius) made mostly spherical pots over which wasp apply layer of mud so that the nest look like a mass of mud this character shows in only few potter wasp. Total 39 nest were observed having different number of pots (cell) - 1 pot (4 nest), 3 (5), 4 (7), 6(10), 7(6), 9(7). We observed 14 cell of 3 nest having the average length of the pots measured 2.22cm long, 1.35 cm wide and 1.4cm deep (n=14)

Key words: - pyriforme potter wasp/caterpillar hunting wasp/nesting behaviour

INTRODUCTION:

Delta pyriforme (Fabricius) (potter wasp) is a cosmopolitan wasp belongs to sub family Eumeninae. Subfamily Eumeninae is widely distributed with around 3600 species in more than 200 genera (Pickett and Carpenter, 2010). Most of the species from Eumeninae are solitary and rarely sub-social (Ducke 1914; Bohart and Stange 1965). Female constructed nest by soil which look like earthen pot then amepotter wasp by the construct pot shaped cell by female wasp. *Delta pyriforme* (Fabricius) are not at all aggressive or harmful to the human population they are predators adult feed on nectar but their larvae feed on an insects larvae of Lepidoptera. (Geometridae, Tortricidae) thus they help in controlling Lepidopterous and coleopterous biological pests of agricultural (Jennings and Houseweart 1984) they act as a biopest controller.

MATERIAL AND METHODS:

Present study for collecting wasp and their nest was conducted during the year of 2018-2020. Location – The nest were collected from few specific locations near Taywade College campus at Koradi region Nagpur District Maharashtra.

OBSERVATION AND RESULT:

Study species – *Delta pyriforme* (Fabricius). The adult Female wasp around 25-27 mm ; Male 20-25mm long, head yellow, a broad transverse black band between the eyes on the vertex; occiput black. Reddish-brown colored antenna. Pronotum entirely and mesoscutum yellow at anterior end, the later black posteriorly; tegula, parategula reddish brown; scutellum and postscutellum usually reddish brown; mesopleuron, metapleuron, propodeum and legs reddish brown variegated with black markings. The Sutures between the scutellum, postscutellum and propodeum black; petiole and basal third of the second gastral segment reddish-brown. Wings deep flavo hyaline with a narrow infumation on apical margin of forewing. (Girish kumar and Gaurav Sharma 2015)

Delta pyriforme pyriforme (Fabricius)

Survey of Previous year nest

Delta pyriforme (Fabricius) nest were identified base on shape size. We sampled 126 cells of 21 nests from different locations. We found a evidence for *Delta pyriforme* (Fabricius) by presence of dead young wasps, mummies of remains paralyzed caterpillar. We also observed in some cells contained dead pupa of parasite and

parasitoid wasp other than *Delta pyriforme*. In which cuckoo wasp (Hymenoptera chrysididae) and wasp Dirt dauber (Hymenoptera Californicum). Some old nest used by spiders, bees, and other wasps as secondary residents.

Nesting - The nest were usually found in open sunny places attached to the tree trunks, on rocks surface, building wall, silling, window frame, on air conditioners but some time found partly covered places like discarded vehicles, inside the pipes etc. female wasp construct their nest by wet mud. Wasp carries clay ball and molding it in to circular pot with the help of mandibule and prothoracic leg. The substratum is always bottom of the cell, Wasp doesn't require more than one day for constructed a single pot. After completed a pot shape cell wasp laid egg inside the pot the egg always hanging to the roof by the silk like thread. The egg was 4.2-4.4 mm in length and 1.3 in diameter (n= 4). The female wasp collected non hairy caterpillars from the different locations like gardens, crop fields etc. and parallelized them by injecting venom. We observed 4 to 9 numbers of caterpillars present in a cell of one to three moth species. Wasp stuffed the pot with paralyzed caterpillar and sill the entry of pot with clay. Adult wasp feed on nectars but the developing young growing one feed on caterpillar the female wasp collects caterpillars for their young ones. After all the pots are constructed the layer of mud applied on the whole nest so that the individual pot are no longer seen the whole nest look like a single unit.

Total 39 nest were observed having different number of pots(cell)-1 pot (4 nest), 3 (5), 4 (7), 6(10), 7(6), 9(7) the largest nest with 22 cell was observed (seiki Yamane 1991). We observed 14 cell of 3 nest having the average length of the pots measured 2.22cm long, 1.35 cm wide and 1.4cm deep (n=14)

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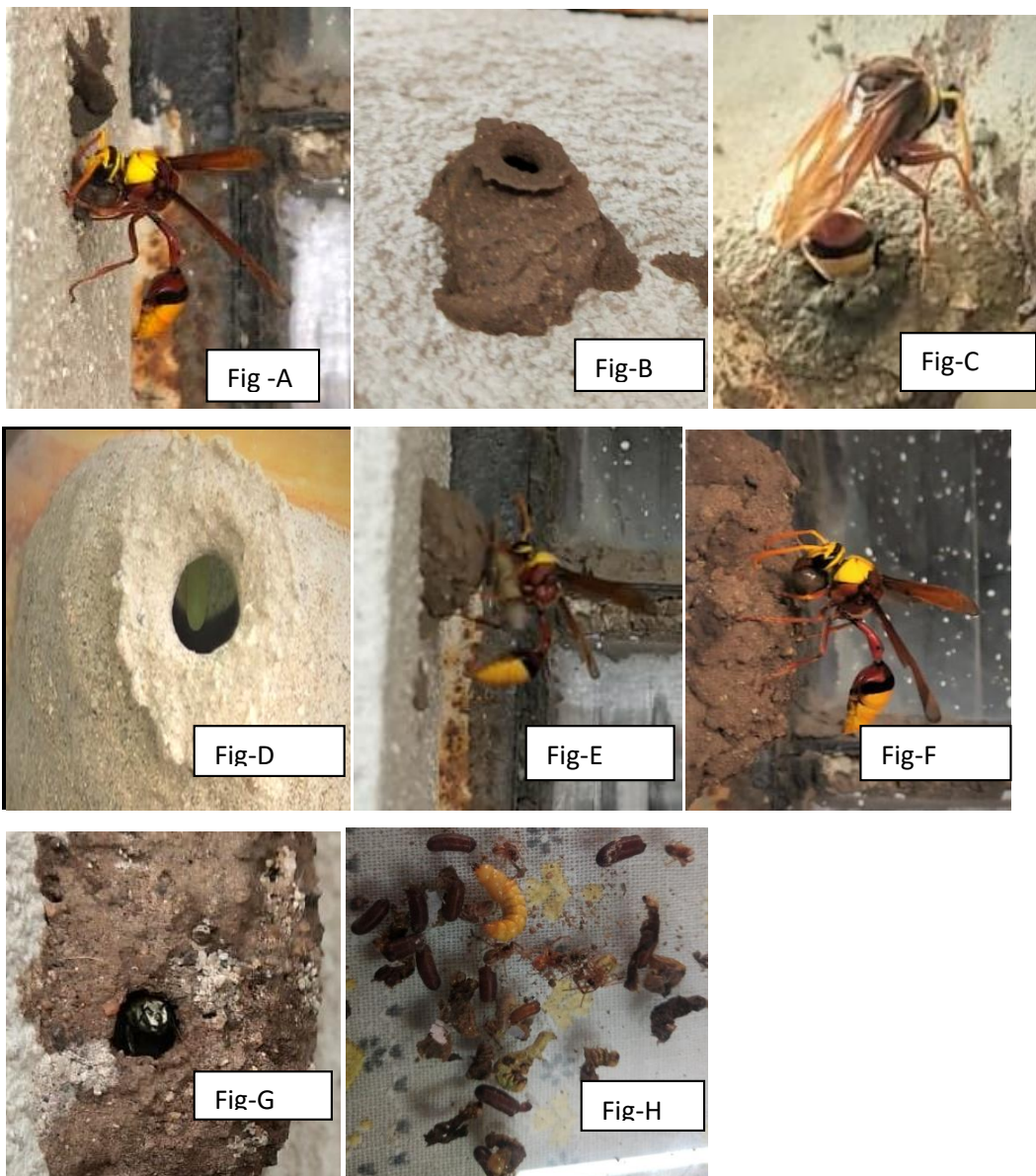


Fig A –female wasp start constructing a pot by mud ball

Fig B- A mud pot

Fig C-Female wasp laid egg in a pot

Fig D- an egg present in a pot

Fig E- Female wasp store paralyzed caterpillar in a pot

Fig F- Wasp apply layer of mud

Fig-Gold nest used as secondary residents.

Fig-H –Some spider and empty brown color pupa shell of mud dauber (sp. *Chalybion californicum*) are found form the nest