ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code:** IILEY11080
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Ianassa paradisus* (Benjamin)
COMMON NAME: A Notodontid Moth

SYNONYMS: *Oligocentria paradisus* (Benjamin, 1932)
Ianassa delicatoides Benjamin, 1932
Schizura paradisus Benjamin, 1932
FAMILY: Notodontidae

AUTHOR, PLACE OF PUBLICATION: F.H. Benjamin. 1932. Pan-Pacific Entomologist 8:55-60.

TYPE LOCALITY: Paradise, Chiricahua Mountains, Cochise County, Arizona.

TYPE SPECIMEN: USNM 00991073 (previously USNM 43684).

TAXONOMIC UNIQUENESS: Formerly treated as *Oligocentria paradisus* (Lafontaine and Schmidt 2010). Miller et al. (2021) placed in the genus *Ianassa*. Pohl and Nanz (2023) follow this treatment. There are nine species in the genus *Ianassa* (Miller et al. 2021, Pohl and Nanz 2023) with six of them occurring in Arizona (Miller et al. 2021).

DESCRIPTION:

Adults: An elongate forewing combined with a white hindwing showing a dark ocellus at the torus characterize members of the genus *Ianassa*. *I. paradisus* has a diagnostic zigzagged black and white forewing postmedial line. This line is always faint in females and can be difficult to see in worn or greasy specimens of both sexes (Miller et al. 2021). The forewing is particularly elongate and acute at its apex in males (Miller et al. 2021). Brushing away scales from the abdominal apex reveals several genital features that provide reliable identification. The configuration of the male St8 shows a pair of deep groves that leave the posterolateral angles of the plate and meet anteriorly to form a deep U-shaped invagination that is unique to *I. paradisus*. This U forms a bifid internal flange which is revealed by dissection. Full dissection also reveals the greatly elongated socii with broad, denticulate apices and a pair of short secondary processes below the uncus that are unique to *I. paradisus*. (Miller et al. 2021). Females have a broadly forked postvaginal plate protruding above the ostium (Miller et al. 2021).

Larvae: The pinkish tan or green caterpillars of *I. paradisus* can be immediately recognized by the white supraspiracular line on A1-A7. It is also the only species in the genus with a

complete, broad reddish middorsal stripe edged laterally with white addorsal stripes (passing through D1 pinacula) (Miller et al. 2021). The head is pinkish tan with a peppering of dark spots that form a wavy band, extending from the addorsal stripe to the antenna. Fully grown larvae can reach 3.5 cm (1.38 in) in length (Miller et al. 2021).

AIDS TO IDENTIFICATION:

Adults: The diagnostic characteristic for *I. paradisus* is the heavy zigzagged black and white forewing postmedial line. Male *I. paradisus* can be distinguished from *I. coloradensis* by the particularly elongate and acute forewing apex (Miller et al. 2021). The only other *Ianassa* species in which females have a forked vaginal plate is *I. wagneri*; the postvaginal plate is short and lanceolate in *I. paradisus*, but is obscured by a large, crenulate antevaginal plate in *I. wagneri*. The most effective way to identify them is by dissection to be able to fully see the genital features that distinguish the species (Miller et al. 2021).

Larvae: Larvae have two MD setae above the spiracle on abdominal segments, whereas other noctuoids have only one (Resh & Cardé. 2003). The white supra-spiracular line present on A1-A7 of *I. paradisus* caterpillars distinguish them from other members of the genus. They are also the only members of the genus with a complete, broad reddish middorsal stripe edges laterally with white addorsal stripes (passing through the D1 pinacula) (Miller et al 2021). *Hyparax* and *Heterocampa* species also exhibit the green/brown larval color polymorphism, but it is not found in other *Ianassa* species (Miller et al. 2021).

ILLUSTRATIONS:

Color photo of adult (Miller et al. 2021, plate A-18)
Monochrome photos of male genitalia (Miller et al. 2021, plate 60)
Monochrome photo of male eighth sterna and terga (Miller et al. 2021, plate74)
Monochrome photo of female genitalia (Miller et al. 2021, plate 87)
Color photo of larvae (Miller et al. 2021, plate L-19)
Color photos: (Lotts and Naberhaus 2025, https://www.butterfliesandmoths.org/species/Oligocentria-paradisus)

TOTAL RANGE: Southeastern Arizona and southwestern New Mexico, southward into Mexico at least as far as Cuiteco in Chihuahua, Mexico on the western slope of the Sierra Madre Occidental (Miller et al. 2021).

RANGE WITHIN ARIZONA: Southeastern Arizona in Cochise, Pima, and Santa Cruz counties (Miller et al. 2021).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Nododontid moth larvae are usually gregarious, and when larvae feel threatened, they will freeze with the ends of their bodies lifted (Borror and White 1970). Nododontid

larva feed on various trees and shrubs, mostly singly but occasionally in large groups (Milne and Milne 1980).

REPRODUCTION: The principle flight extends from July into the first half of August. Adults of what presumably represent a small facultative generation may be observed into October during wet years (Miller et al. 2021).

Order Lepidoptera: Segmental appendages of the abdomen are absent except for vestiges that may form parts of the genitalia. The genitalia of both sexes are often complex and bear characteristic spines, teeth, setae, and scale tufts (Resh & Cardé 2003). These structures are important in complex courtships and matings, preventing hybridization between unsuitable males and females. During copulation in males, a median, tubular organ (the aedeagus) is extended through an eversible sheath (vesica) to inseminate the female (Resh & Cardé 2003). The female genitalia exhibit a number of different patterns of the internal ducts and the openings, varying from a condition in which there are no special genital openings, insemination and egg laying taking place through a single aperture, shared with the excretory system, to one in which there are two specialized openings, one for insemination and one for oviposition, both distinct from the anus (Resh & Cardé 2003). Female prominents, in the family Notodontidae, lay their eggs on the leaves of host plants (McGavin 2002).

The testes of the male are paired in primitive lepidopterans but fused into a single organ in advanced forms. In both cases, the sperm ducts are paired (Preston-Mafham 1993). As in other insects, the sperm pass from the testes down paired ducts for storage in sacs called seminal vesicles (Preston-Mafham and Preston-Mafham 1993). The female reproductive system consists of paired ovaries, paired accessory glands that provide the yolks and shells of the eggs, and a system of receptacles and ducts for receiving, conducting, and storing sperm (Preston-Mafham 1993). The individual oviducts join to form a common oviduct that leads to the vagina. In copulation, the male deposits a sperm capsule (spermatophore) in a receptacle (bursa copulatrix) of the female. The spermatophore releases the sperm, which swim into the oviduct and thence to the seminal receptacle (bulla seminalis) where they are stored until egg laying, which may be hours, days, or months after mating (Preston-Mafham and Preston-Mafham 1993).

FOOD HABITS: *I. paradisus* is an oak specialist (Miller et al. 2021).

HABITAT: Found in oak woodlands (Miller et al. 2021).

ELEVATION: 4,400 – 7,600 ft (1,341 – 2,316 m) (Miller et al. 2021)

PLANT COMMUNITY: Arizona Oak and Emory Oak (Miller et al. 2021)

POPULATION TRENDS: *I. paradisus* is one of the most common Notodontidae collected at light traps in the area around the Southwestern Research Station (Miller et al. 2021), but population trends are unknown.

SPECIES PROTECTION AND CONSERVATION

Status definitions: https://bit.ly/hdms-status-definitions
Heritage Network Conservation Status Rank definitions: https://bit.ly/hdms-rank-definitions

ENDANGERED SPECIES ACT STATUS:
STATE STATUS:
HERITAGE NETWORK STATUS: GU
S1

OTHER STATUS:

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Life history, population status, and population range studies need to be performed.

LAND MANAGEMENT/OWNERSHIP:
USFS - Coronado National Forest

SOURCES OF FURTHER INFORMATION

REFERENCES:

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Borror, Donald J. and Richard E. White. 1970. A field guide to insects, America north of Mexico. Peterson Field Guide Series. Houghton Mifflin Company. Boston Massachusetts. 404 pages.

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Pohl, Gregory R. and Stephen R. Nanz. 2023. Annotated taxonomic checklist of the Lepidoptera of North America, north of Mexico. Wedge Entomological Research Foundation, Bakersfield, California. xiv + 580 pages.

Preston-Mafham, Rod and Ken Preston-Mafham. 1993. The encyclopedia of land invertebrate behaviour. The MIT Press. Cambridge, Massachusetts. 320 pages.

Resh, Vincent H. and Ring T. Carde. 2003. Encyclopedia of insects. Academic Press. New York, New York. 1,266 pages.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Any moth of the family Notodontidae (a notodontian) is considered a "Prominent moth", so called because the larva has a hump or prominence on its back (Miller et al. 2021).

Revised: 2004-08-13 (AMS)
2004-09-20 (SMS)
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Arizona Game and Fish Department. 2025. *Ianassa paradisus*, A Notodontid Moth Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 5 pages.