ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** IILEW0H080
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Syssphinx raspa* (Boisduval, 1872)
COMMON NAME: A Royal Moth

SYNONYMS: *Sphingicampa raspa*
Adelocephala raspa
FAMILY: Saturniidae

AUTHOR, PLACE OF PUBLICATION: Boisduval, 1872.

TYPE LOCALITY: Oaxaca, Mexico (Tuskes et al. 1996). This may be erroneous because there are no records from this state (NatureServe 2025).

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: This is a large family with about 3,454 species described in 180 genera (Kitching et al. 2018). There are 51 species in the genus *Syssphinx* (Kitching et al. 2018), nine of which occur in North America north of Mexico (Pohl and Nanz 2023). *Syssphinx raspa* is the only species in the genus occurring in Arizona.

North American species have been placed in the genus *Sphingicampa* by some authors (Tuskes et al. 1996, Forest Guardians 2007, U.S. Fish and Wildlife Service 2009, Rogers 2014, Lotts and Naberhaus 2025). Others (Felger and Wilson 1995, Poole and Gentili 1996, Pohl and Nanz 2023, Khramov 2025) placed the species in the genus *Syssyphinx*. Lemaire (1988, in Peigler and Opler 1993) synonymized the generic name *Sphingicampa* under *Syssphinx* and clarified the identity of *S. raspa*. Kitching et al. (2018) treat *Sphingicampa* as a synonym of *Syssphinx*. HDMS follows Pohl and Nanz (2023) in using *Syssphinx*.

Ferguson (1971, in Tuskes et al. 1996) treated *Sphingicampa raspa* as a junior synonym of *Sphingicampa albolineata*, but Lemaire (1988) elevated *raspa* to species level based on genetic differences.

DESCRIPTION: The wingspan is 2 5/8 – 3 ¼ in. (6.6-8.2 cm) (Lotts and Naberhuas 2025). Females are larger than males. The upperside of the forewing is yellow to gray or olive green with a white submedian line and a white diagonal line running from the wing tip to the inner margin. The upperside of the hindwing is red to pink with a whitish postmedian line (Tuskes et al. 1996, Lotts and Naberhaus 2025). Antennae are feathery and large. Adults do not have hearing organs or tympana, nor do they feed so their mouthparts are vestigial (Milne and Milne 1980). Males in Arizona have a short, stout spine on the valve of the genitalis (Tuskes 1985).

Mature larvae have a long, thin dorsal scolium and are 54-60mm. *Raspa* is the only *Syssphinx* with blue and yellow dorsal scoli and orange spiracles in Arizona (Tuskes et al. 1996). The dorsal and dorsolateral abdominal scoli are silver and yellowish green. Below the spiracular line, the tubercles are yellow and silver (Tuskes 1985). Detailed larval descriptions are provided in Tuskes (1985).

AIDS TO IDENTIFICATION: *S. raspa* appears similar to *S. albolineata,* but is distinguished by the dorsal forewing of *S. albolineata* being smaller and browner than that of *S. raspa* and the medial and antemedial white lines being closer together in *S. albolineata,* leading to the diagonal line to terminate in the basal third of the wing rather than in the medial area. The diagonal white lines of the forewings in *raspa* may also end near the basal third of the inner wing margin, however, it is well separated from the antemedial line. Additionally, the white line on the dorsal hindwing tends to be postmedial on *raspa*, while in *S. albolineata* this line is medial or nearly medial (Tuskes et al. 1996). The white antemedial and diagonal forewing lines present in *S. raspa* are lacking in other species of Arizona *Syssphinx* (Tuskes et al. 1996).

ILLUSTRATIONS:

Color photo (Lotts and Naberhaus 2025, http://www.butterfliesandmoths.org/)
Color photo (SCAN 2025)

TOTAL RANGE: Southeastern Arizona and Big Bend Area in Texas south into Mexico (Lotts and Naberhaus 2025). However, there is a lack of clarity on the generic placement of the Texas specimen (Tuskes et al. 1996)

RANGE WITHIN ARIZONA: In Arizona, *S. raspa* has been collected in Cochise, Santa Cruz, and Pima Counties. In Cochise County, the species has been collected from the Huachuca Mountains at Copper, Miller, Garden, and Ash Canyons in Cochise County; the Patagonia Mountains at Washington Camp and near Harshaw in Santa Cruz County; Box Canyons and Lower Madera at the base of the Santa Rita Mountains and Lake Peña Blanca in the Atacosa

Mountains in Pima County. Record are infrequent from the Peña Blanca, Lower Madera Canyon, and Box Canyon locations (Tuskes et al. 1996).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Adults may be found at lights through late July to early August. Males are attracted to lights between 0100 h and 0300 h, and females are attracted between 2200 and 2350. Males are more commonly attracted to lights than females (Tuskes et al. 1996). Adults enclose in the evening and usually remain inactive until the next night. In captivity, mating usually occurs from 1900 h to 2300 h, where the pairs stay together until the following evening. 60-70% of the eggs will be deposited by females in the first evening, and the rest over the next 4 evenings (Tuskes et al. 1996). Ova are green and doroventrally compressed creating a flattened ovid with a diameter of 2.4 x 1.9 mm. Embryos develop with small gas bubbles appearing before the head and body develop (Tuskes 1985).

Eggs kept at 29°C hatch from 9-11 days. Egg to adult is only 5-6 weeks. Larvae were found in *Acacia angustissima* in Miller Canyon, leading to the conclusion that the plant is the larval host plant (Tuskes et al. 1996).

A few records from mid to late September in Cochise County, Arizona, and Mexico indicate that there is possibly a second brood in some years. Captive pupae that were kept under humid and warm conditions emerged between September 16th to the 24th, supporting this possibility of second broods in Arizona (Tuskes et al. 1996).

REPRODUCTION: The adults occur in Arizona in late July and early August with a few in the second half of September. The lone Texas record is for late April. The larvae should mature about a month later. Caterpillars pupate and overwinter in chambers in the ground (Lotts and Naberhaus 2025). Flight season possibly may vary with rainfall (NatureServe 2025).

There is little sexual dimorphism in adults, but size differences can be noticed. Females are larger, with their forewings 34-38 mm, while males are 30-34 mm. Female wings are also more rounded. In Arizona, the males' ground color of the forewing is consistently yellow, and the females may be yellow or olive green, or gray (Tuskes et al. 1996).

Due to their cryptic coloration, larvae are often difficult to find on *Acacia angustissima*, however, the silver dorsal and dorsolateral blade-like scoli break up the solid green pattern of the leaves. Before pupation, the larval coloration changes from leaf green to a dull green. Within hours after this, it searches for a pupation site in the soil (Tuskes 1985). Mature larvae form a poorly defined pupation chamber by burrowing into dry, loose soil by gathering debris together with silk. If captive, pupae should not be exposed to freezing temperatures, and

should be moistened in the soil in which they are overwintering in. Watering should begin in July and watering frequency should be increased to once a week. Keeping pupae wet for too long can increase the risk of infection so soil should not stay moist for more than 1-2 days (Tuskes et al. 1996).

FOOD HABITS: The adults have non-functional mouthparts and are non-feeding (McGavin 2002), and the immatures are herbivores. *Acacia angustissima* (Prairie acacia) is the documented natural food plant, but there could be a few other woody legumes used (Tuskes et al. 1996). Young caterpillars perch on the undersides of petioles and feed on the leaf bases. By the second day after the first instar, larvae are large enough to consume a leaflet without moving off the petiole. By the third to last instar, they chew a notch in the underside of the petiole, which forms a "v" shape because of the chewing at the petiole's weak point. Because of this, the larvae can consume the distal-most leaflets without needing to crawl to the tip. Larvae will consume all of the edible leaves on 3-5 stems within the first 4 instars (Tuskes 1985).

Larvae have a strong preference for leaves of an intermediate age. Larvae will leave a plant with old and discolored leaves and wander on the ground in search of better ones before eating such leaves (Tuskes 1985). Larvae accept other related subspecies of *Acacia angustissima,* such as Texas Prarie acacia (*Acacia texensis)*. Additionally, some broods accepted honey locust (*Gleditsia triacanthos*) but were noted to have a higher mortality, slower development, and more frequently stunted adults (Tuskes et al. 1996). This brood required an extra 3-6 weeks longer to develop than those reared on *A. angustissima* (Tuskes 1985).

HABITAT: Madrean woodlands with oaks, junipers, legumes, and other woody trees and shrubs and desert scrub (Lotts and Naberhaus 2025). A good density of legume caterpillar food plants must be present. Michael Wilson found *Albizia distachya* to be a suitable host, but was unable to successfully rear larvae. Other legumes found to be unsuitable hosts include screwbean mesquite (*Prosopis pubescens),* Jeruselem thorn (*Parkinsonia aculeata*), blue paloverde (*Cercidium floridum*), huisache (*Acacia farnesiana*), and black locust (*Robinia pseudoacacia*) (Tuskes et al. 1996).

ELEVATION:

PLANT COMMUNITY: Madrean Woodlands, Desert Scrubland.

POPULATION TRENDS:

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: None (USDI, FWS 2009)
STATE STATUS:
HERITAGE NETWORK STATUS: G2G3
S2
OTHER STATUS:

PREVIOUS STATUS
ENDANGERED SPECIES ACT STATUS: PTN (Forest Guardians 2007)

MANAGEMENT FACTORS:
Threats are mainly from the lack of targeted management of the habitat. This includes excessive logging and both intentional and climate change-related fires. Habitat may also be further fragmented by urban development (NatureServe 2025).

PROTECTIVE MEASURES TAKEN: Species was included (as *Sphingicampa raspa*) in a petition to list 475 species as threatened or endangered submitted by Forest Guardians (2007) on 2007-06-18. U.S. Fish and Wildlife Service (2009) issued a 90-day finding on 2009-12-16 that listing is not warranted (as *Sphingicampa raspa*).

SUGGESTED PROJECTS: Inventory populations to determine conservation status.

LAND MANAGEMENT/OWNERSHIP:
USFS - Coronado National Forest.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:
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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

These large moths are not closely related to the true Asiatic silkworm, but largely unsuccessful attempts have been made to commercially utilize the silk from their cocoons (Milne and Milne 1980).

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2025-04-21 (KBD)