

Exotic butterflies and moths (Lepidoptera) in botanical gardens – potential for education and research

MARTIN SUVÁK

Botanical Garden of Pavol Jozef Šafárik University in Košice, Mánesova 23, 043 52
Košice, martin.suvak@upjs.sk

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Abstract: Exhibitions of live butterflies and moths can have very high educational potential. In natural environments, lepidopteran and plant taxa closely interact and many characteristics of representatives of both these groups are results of such relationships. Therefore, free flying butterflies in botanical gardens enable demonstrations of a wide variety of natural phenomena studied within entomology, ecology, botany, evolutionary theory etc. The Victoria greenhouse of Botanical Garden of P. J. Šafárik University in Košice provides excellent conditions for such observations. Combination of tropical and subtropical plants with live exotic butterflies and moths, in many cases from the same regions as the plant taxa, gives a unique opportunity to see phenomena usually naturally available only far away from Central Europe. During annual seasonal “butterfly shows” in the years 2008 – 2015, the visitors of this greenhouse could see at least 182 different lepidopteran taxa mostly from Central and South America, Africa and South East Asia. Next to the presented species diversity, some observations on food preferences, behavior, mimetic forms, natural enemies and other ecological relationships are discussed here.

Keywords: Lepidoptera, butterflies, moths, education, ecology, botanical garden, greenhouses.

Introduction

Exhibitions of live insects and other arthropods in insect zoos or insectaria have enormous educational value (SAUL-GERSHENZ 2009). Free-flying butterflies are among the most popular subjects there. Next to the specialized butterfly houses, presentations of live butterflies and moths have spread worldwide in a number of other sites, at least seasonally. International cooperation of butterfly breeders (usually farmers in tropical and subtropical regions) with distributors of pupae (sometimes also with their own pupae production) and rapid air mail enable to satisfy customer requirements practically everywhere. In the world, butterfly exhibits are held in various facilities of different sizes but with otherwise suitable conditions (temperature, humidity, light, access for visitors etc.), usually in greenhouses. Butterfly farmers and distributors can organize their own exhibitions but such actions are seasonally undertaken also by other subjects with appropriate spaces, using pupae from commercial suppliers. Since lepidopterans and plants have close relationships, botanical gardens can provide very suitable conditions for such presentations. Free-flying butterflies between wide variety of plants and proper explanatory boards may increase educative value of such exhibitions. However, this potential is not always fully used.

Since 2008, a live butterfly show is annually organized also in Botanical Garden of Pavol Jozef Šafárik University in Košice (hereinafter BG PJŠU). It became one of the most popular seasonal event with plenty of visitors of all ages every year (Tab. 1). Though many of them just wants to see flying strange creatures with colorful wings, there are much more to see also for more demanding visitors, students and teachers of biological disciplines, professional entomologists and others.

Tab. 1. Summary data on butterfly exhibitions in BG PJŠU

| Year | Duration of exhibitions | | | Number of visitors | No. of pupae | No. of different butterfly species |
|--------------|-------------------------|-----------|-------------|--------------------|--------------|------------------------------------|
| | from | to | no. of days | | | |
| 2008 | 15.5.2008 | 15.6.2008 | 32 | 19682 | 1055 | 46 |
| 2009 | 22.5.2009 | 28.6.2009 | 38 | 25463 | 1800 | 66 |
| 2010 | 21.5.2010 | 30.6.2010 | 41 | 18349 | 2742 | 55 |
| 2011 | 20.5.2011 | 3.7.2011 | 45 | 20679 | 2727 | 83 |
| 2012 | 18.5.2012 | 30.6.2012 | 44 | 15438 | 3295 | 99 |
| 2013 | 17.5.2013 | 30.6.2013 | 45 | 17337 | 3087 | 86 |
| 2014 | 16.5.2014 | 30.6.2014 | 46 | 14069 | 3035 | 68 |
| 2015 | 22.5.2015 | 30.6.2015 | 40 | 20614 | 3110 | 89 |
| Total | | | 331 | 151631 | 20851 | 182 |

Material and methods

Butterfly show in BG PJŠU is usually presented for visitors within a time span of cca 40 days, in May-June (Tab. 1). Some pupae are ordered in advance before opening the exhibition and next orders are realized later once a week to guarantee enough eclosed butterflies during the specified period. The pupae are

ordering from specialized suppliers either as individual species or as a special mixes according to their geographical origin or taxonomic relatedness.

The butterfly exhibition itself takes place in the Victoria greenhouse (Fig. 1) of BG PJŠU. It covers an area of 310 m² (25 m x 12.5 m), its maximum height is 4.5 m and the total volume is about 1150 m³. Two water basins are in the centre and a circular trail for visitors runs along the side walls of this greenhouse. The plants (Tab. 2) grow in all free spaces between basins and a pathway, including lianas and epiphytes on the walls and arranged tree trunks. The average temperature here is about 25°C but occasionally it can vary from 18°C to 40 °C (in hot summer days). Humidity can be relatively high (up to 95 %) with respect to the water basins.

The pupae are placed to special open boxes within the greenhouses, so enclosed butterfly are free to fly to the greenhouse space.

Next to the plants with long term fixed locations, some other plants are used to be placed there temporarily – some flowering potted plants or their cuttings arranged around basins as a source of nectar for flying butterflies. Other food sources are provided on special feeders (mostly fresh or decaying fruits).

During last 8 years of annually undertaken butterfly exhibitions, a lot of interesting phenomena was registered and many photographs were taken here (all selected illustrative figures below). Some specimens were also stored, e.g. several dead butterflies were collected, individuals of other insects (e.g. parasitoids) and spiders were sampled for future analyses. Selected data on species diversity (Fig. 2, Tab. 3) and observations on other interesting phenomena are summarised below.



Fig. 1. Victoria greenhouse in Botanical Garden of P. J. Šafárik University in Košice.

Tab. 2. Plants in the Victoria greenhouse of BG PJŠU in Košice.

| Plant taxa ¹ | Distribution ² |
|--|--|
| Pteridophyta | |
| Aspleniaceae | |
| <i>Asplenium nidus</i> L. | tropical SE Asia, E Australia, Hawaii, Polynesia, Christmas Island, India, E Africa |
| Cibotiaceae | |
| * <i>Cibotium</i> Kaulfuss sp. | |
| Dryopteridaceae | |
| <i>Cyrtomium falcatum</i> (L. fil.) Presl | China, Taiwan, North Korea, South Korea, Japan, Vietnam |
| <i>Tectaria cicutaria</i> (L.) Copel. | Puerto Rico, Cuba, Hispaniola, Jamaica |
| Lomariopsidaceae | |
| <i>Nephrolepis exaltata</i> (L.) Schott | N South America, Mexico, Central America, Florida, West Indies, Polynesia, Africa |
| Lygodiaceae | |
| <i>Lygodium japonicum</i> (Thunb.) Sw. | China, South Korea, Sri Lanka, Philippines, Moluccas, Sunda Islands, New Guinea, Peninsular Malaysia, Vietnam, Laos, Cambodia, Thailand, India Nepal |
| Polypodiaceae | |
| <i>Platycterium bifurcatum</i> (Cav.) C.Chr. | Java, New Guinea, SE Australia |
| <i>Platycterium</i> Desv. sp. | tropical and temperate areas of South America, Africa, SE Asia, Australia, New Guinea |
| Pteridaceae | |
| <i>Acrostichum aureum</i> L. | tropical and sub-tropical areas around the world (mangrove swamps) |
| <i>Adiantum raddianum</i> C.Presl | tropical and subtropical South America. |
| Cycadophyta | |
| Cycadaceae | |
| <i>Cycas circinalis</i> L. | Sri Lanka |
| * <i>Cycas rumphii</i> Miq. | Indonesia, New Guinea, Christmas Island |
| Zamiaceae | |
| <i>Encephalartos villosus</i> Lem. | S Africa |
| <i>Encephalartos ferox</i> (G.Bertol) Lehm. | SE Africa |
| Magnoliophyta | |
| Araliaceae | |
| * <i>Polyscias</i> J.R.Forst. & G.Forst. sp. | tropical areas |
| Acanthaceae | |
| <i>Fittonia verschaffeltii</i> (Lem.) Van Houtte | Peru |
| <i>Hypoestes sanguinolenta</i> (Van Houtte) Hook. f. | Madagascar |
| <i>Ruellia amoena</i> Nees | Argentina, Cerrado vegetation of Brazil, Mexico |
| <i>Ruellia portellae</i> Hook. fil. | Brazil |
| * <i>Thunbergia affinis</i> S.Moore | E Africa |
| Amaranthaceae | |
| * <i>Celosia argentea</i> L. | India |
| <i>Alternanthera</i> Forssk. | mostly in tropical Americas, other species in Asia, Africa, and Australia |
| *unidentified sp. | |

Tab. 2. – cont.

| Plant taxa ¹ | Distribution ² |
|--|---|
| Anacardiaceae | |
| * <i>Mangifera indica</i> L. | India |
| Apocynaceae | |
| <i>Allamanda cathartica</i> L. | Brazil |
| <i>Dipladenia splendens</i> (Hook.f.) A.DC. | Brazil |
| <i>Stephanotis floribunda</i> Brongn. | Madagascar |
| Araceae | |
| <i>Alocasia macrorrhizos</i> (L.) G.Don | from Malaysia to Queensland |
| <i>Alocasia</i> (Schott) G.Don | tropical and subtropical Asia to E Australia |
| <i>Anthurium andraeanum</i> Linden ex André | Colombia, Ecuador |
| <i>Anthurium digitatum</i> (Jacq.) Schott | Venezuela |
| <i>Anthurium hookeri</i> Kunth | Central and South America |
| <i>Anthurium magnificum</i> Linden | Colombia |
| <i>Anthurium pedatoradiatum</i> Schott | Mexico |
| <i>Anthurium scherzerianum</i> Schott | Costa Rica |
| <i>Anthurium tetragonum</i> Hook. ex Schott | Belize, Guatemala, Honduras, Mexico, Panama |
| <i>Anubias</i> Schott sp. | tropical central and W Africa |
| <i>Caladium bicolor</i> (Aiton) Vent. | from Costa Rica to N Argentina |
| <i>Caladium</i> Vent. sp. | South America, Central America |
| <i>Colocasia esculenta</i> (L.) Schott | Malaysia |
| <i>Cryptocoryne pontederiifolia</i> Schott | Sumatra |
| <i>Cryptocoryne walkeri</i> Schott 1857 | Sri Lanka |
| <i>Monstera decursiva</i> (Roxb.) Schott | China, Indian subcontinent, Indochina |
| <i>Monstera deliciosa</i> Liebm. | from S Mexico to Panama |
| <i>Monstera karwinskyi</i> Schott | from Mexico to N South America |
| <i>Monstera obliqua</i> Miq. | Brazil |
| <i>Philodendron melanochrysum</i> Linden & André | from Costa Rica to Columbia into Ecuador and Peru |
| <i>Philodendron bipinnatifidum</i> Schott ex Endl. | South America, namely Brazil, Bolivia, Argentina, and Paraguay |
| <i>Philodendron erubescens</i> K.Koch & Augustin | Colombia |
| <i>Philodendron panduriforme</i> (Kunth) Kunth | N and W areas of the Amazon basin: Peru, Ecuador, Brazil, Colombia, Venezuela |
| <i>Philodendron wendlandii</i> Schott | from Nicaragua to Panama |
| <i>Philodendron x corsinianum</i> Hort. | |
| <i>Philodendron xanadu</i> Croat, Mayo & J.Boos, 2002 publ. 2003 | Brazil |
| <i>Pistia stratiotes</i> L. | pantropical, probably originated in Africa |
| <i>Scindapsus aureus</i> (Linden & André) Engl., 1908 | French Polynesia |
| <i>Scindapsus pictus</i> Hassk. | Bangladesh, Thailand, Peninsular Malaysia, Borneo, Java, Sumatra, Sulawesi, Philippines |
| <i>Scindapsus</i> Schott sp. | SE Asia, New Guinea, Queensland, W Pacific islands |
| <i>Spathiphyllum wallisii</i> Regel | Central America |
| <i>Spathiphyllum</i> Schott sp. | tropical regions of the Americas and SE Asia |
| <i>Syngonium</i> Schott sp. | S Mexico, West Indies, Central and South America |
| * <i>Zamioculcas zamiifolia</i> (Lodd.) Engl. | E Africa |
| unidentified sp. | |

Tab. 2. – cont.

| Plant taxa ¹ | Distribution ² |
|---|---|
| Araliaceae | |
| * <i>Dizygotheca elegantissima</i> (Veitch ex Mast.) R. Vig. & Guillaumin | New Caledonia |
| <i>Schefflera digitata</i> J.R.Forst. et G.Forst. | New Zealand |
| Areaceae | |
| <i>Chamaedorea</i> Willd. sp. | subtropical and tropical regions of the Americas |
| <i>Chamaedorea elegans</i> Mart. | S Mexico, Guatemala |
| <i>Chamaedorea oblongata</i> Mart. | Belize, Guatemala, Honduras, Mexico, Nicaragua |
| <i>Pritchardia hillebrandii</i> (Kuntze) Becc. | Hawaii |
| Aristolochiaceae | |
| <i>Aristolochia gigantea</i> Mart. & Zucc. | Brazil |
| * <i>Aristolochia</i> L. sp. | widespread in different climates of the world |
| Asparagaceae | |
| <i>Asparagus myriocladus</i> Baker | S Africa |
| * <i>Asparagus</i> L. sp. | from rainforest to semi-desert habitats of the world |
| <i>Cordylina terminalis</i> Kunth | tropical SE Asia, Papua New Guinea, Melanesia, NE Australia, Polynesia |
| <i>Dracaena</i> Vand. ex L. sp. | Africa, S Asia, Central America |
| <i>Ledebouria kirkii</i> (Baker) Stedje & Thulin | tropical Africa |
| Asteraceae | |
| * <i>Argyranthemum frutescens</i> (L.) Sch.Bip. | Canary Islands |
| Bignoniaceae | |
| <i>Tecomaria capensis</i> (Thunb.) Spach. | S Africa |
| <i>Tecoma</i> Juss. sp. | the Americas, Africa |
| Boraginaceae | |
| * <i>Heliotropium</i> L. sp. | subtropical regions of the world |
| Bromeliaceae | |
| x <i>Cryptbergia</i> (<i>Cryptanthus bahianus</i> x <i>Billbergia nutans</i>) | |
| <i>Aechmea bracteata</i> (Swartz) Grisebach | Central America, Mexico, Colombia, Venezuela |
| <i>Aechmea brasiliensis</i> Regel | Cerrado vegetation in Brazil, N Argentina, Bolivia, Paraguay, Uruguay |
| <i>Aechmea caudata</i> Lindman | SE Brazil |
| <i>Aechmea distichantha</i> Lem. | Cerrado vegetation in Brazil, N Argentina, Bolivia, Paraguay, Uruguay |
| <i>Aechmea fasciata</i> (Lindl.) Baker | Brazil |
| <i>Aechmea fillicaulis</i> (Griseb.) Mez | Venezuela |
| <i>Aechmea gamosepala</i> Wittm. | S Brazil |
| <i>Aechmea chantinii</i> (Carrière) Baker | Amazon rainforest vegetation in Brazil, Venezuela, Colombia, Ecuador and Peru |
| <i>Aechmea chlorophylla</i> L.B.Sm. | E Brazil |
| <i>Aechmea lueddemanniana</i> (K. Koch) Mez in Engler | Central America |
| <i>Aechmea mexicana</i> Baker | Mexico, Central America, Colombia, Ecuador |
| <i>Aechmea organensis</i> Wawra | SE Brazil |
| <i>Aechmea orlandiana</i> L.B.Sm. | Brazil |
| <i>Aechmea pubescens</i> Baker | Costa Rica, Honduras, Nicaragua, Panama, Colombia, Venezuela |

Tab. 2. – cont.

| Plant taxa ¹ | Distribution ² |
|--|--|
| <i>Aechmea racinae</i> L.B. Smith | Brazil |
| <i>Aechmea recurvata</i> (Klotzsch) L.B. Smith | S Brazil, Paraguay, Uruguay, N Argentina |
| <i>Aechmea tillandsioides</i> (Mart. ex Schult. & Schult.f.) Baker | S Mexico, Central America, and N South America |
| <i>Aechmea weilbachii</i> Didrichsen | E Brazil |
| <i>Aechmea</i> Ruiz & Pav. sp. | from Mexico through South America |
| <i>Ananas comosus</i> (L.) Merr. | South America, Central America |
| <i>Billbergia decora</i> Poeppig & Endlicher | Peru, Bolivia, Brazil |
| <i>Billbergia euphemiae</i> E. Morren | Brazil |
| <i>Billbergia horrida</i> Regel | Brazil |
| <i>Billbergia</i> "Hoelscheriana" (<i>B. nutans</i> x <i>Saundersii</i>) | |
| <i>Billbergia nutans</i> H.Wendl. | Brazil, Paraguay, Uruguay, Argentina |
| <i>Billbergia vittata</i> Brongniart | Brazil |
| <i>Billbergia</i> x <i>windii</i> (<i>Billbergia nutans</i> x <i>Bilbergia decora</i>) | |
| <i>Billbergia</i> Thunb. sp. | S Mexico, West Indies, Central America, South America |
| <i>Cryptanthus bivittatus</i> Rgl. | E Brazil |
| <i>Edmundoa lindenii</i> (Regel) Leme | Brazil |
| <i>Guzmania melinonis</i> Regel | Bolivia, Peru, Colombia, the Guianas, Venezuela, Brazil, Ecuador |
| <i>Guzmania minor</i> Mez | Central America, N and central South America, S Mexico and the West Indies |
| <i>Guzmania monostachia</i> (L.) Rusby ex Mez | South America (Bolivia, Brazil, Colombia, Ecuador, Peru, Venezuela), Central America, the West Indies, Florida |
| <i>Guzmania</i> Ruiz & Pav. sp. | Florida, the West Indies, S Mexico, Central America, N and W South America |
| <i>Hohenbergia stellata</i> Schult. & Schult.f. | Trinidad and Tobago, Martinique, Netherlands Antilles, Venezuela, NE Brazil |
| <i>Neoregelia carolinae</i> (Beer) L.B.Sm. | Brazil |
| <i>Neoregelia marmorata</i> (Baker) L.B. Smith | Brazil |
| <i>Neoregelia pineliana</i> (Lemaire) L.B. Smith | Brazil |
| <i>Neoregelia spectabilis</i> (T. Moore) L.B. Smith | S Brazil |
| <i>Neoregelia tristis</i> (Beer) L.B. Smith | Brazil |
| <i>Nidularium purpureum</i> Beer | Brazil |
| <i>Pitcairnia carnea</i> Beer | Panama |
| <i>Pitcairnia corallina</i> Linden & André | Brazil, Colombia, Peru. |
| <i>Pitcairnia xanthocalyx</i> Martius | Mexico |
| <i>Quesnelia liboniana</i> (De Jonghe) Mez | Brazil |
| <i>Tillandsia</i> L. sp. 1 | Central and South America, S United States, West Indies |
| <i>Tillandsia</i> L. sp. 2 | Central and South America, S United States, West Indies |
| <i>Tillandsia stricta</i> Solander | South America, Trinidad |
| <i>Tillandsia usneoides</i> (L.) L. | SE United States, Mexico, Bermuda, the Bahamas, Central America, South America, West Indies |
| <i>Vriesea</i> hybr. (<i>Vriesea glutinosa</i> x <i>Vriesea splendens</i>) | |

Tab. 2. – cont.

| Plant taxa ¹ | Distribution ² |
|---|---|
| <i>Vriesea scalaris</i> E. Morren | Brazil, Venezuela |
| <i>Vriesea</i> Lindl. sp. | Mexico, Central America, South America, West Indies |
| <i>Vriesea splendens</i> (Brongn.) Lem. | Trinidad, E Venezuela, the Guianas |
| <i>Wittrockia amazonica</i> (Baker) L.B.Sm. | Brazil |
| unidentified sp. 1 | |
| unidentified sp. 2 | |
| unidentified sp. 3 | |
| Cactaceae | |
| <i>Lepismium</i> Pfeiff. sp. | tropical South America |
| <i>Rhipsalis baccifera</i> (J.S. Mueller) Stearn | Central and South America, the Caribbean, Florida |
| <i>Rhipsalis</i> Gaertn. sp. | Central America, Caribbean, N and central South America, tropical Africa, Madagascar, Sri Lanka |
| <i>Selenicereus chrysocardium</i> (Alexander) Kimmach | Mexico |
| <i>Schlumbergera</i> Lem. sp. | Brazil |
| Clusiaceae | |
| <i>Clusia rosea</i> Jacq. | Caribbean, Florida |
| Commelinaceae | |
| <i>Tradescantia</i> Ruppis ex L. sp. | New World from S Canada south to N Argentina including the West Indies |
| Costaceae | |
| <i>Costus lucanusianus</i> J.Braun & K.Schum. | tropical Africa |
| <i>Costus malortieanus</i> H.Wendl. | Nicaragua, Costa Rica |
| <i>Cheilocostus speciosus</i> (J.Konig) C.Specht | SE Asia, China, Queensland |
| Cucurbitaceae | |
| <i>Neoalsomitra sarcophylla</i> (Wall.) Hutchinson | Myanmar, Thailand, Laos, Philippines, Palawan, Cambodia, Vietnam, Sulawesi |
| Cyperaceae | |
| <i>Cyperus altermifolius</i> L. | Madagascar |
| * <i>Cyperus papyrus</i> L. | Africa |
| Erythroxylaceae | |
| <i>Erythroxylum coca</i> Lam. | rain forests of the Andes |
| Euphorbiaceae | |
| <i>Codiaeum</i> A.Juss. sp. | insular SE Asia, N Australia, Papua New Guinea |
| <i>Codiaeum variegatum</i> (L.) A.Juss. | Indonesia, Malaysia, Australia, W Pacific Ocean islands |
| Geraniaceae | |
| + <i>Pelargonium</i> L'Hér. sp. | temperate and tropical regions of the world, many species in S Africa. |
| Gesneriaceae | |
| <i>Aeschynanthus radicans</i> Jack | humid tropics of the Malay Peninsula south to Java |
| <i>Columnnea schiedeana</i> Schlechtend. | E Mexico |
| Heliconiaceae | |
| <i>Heliconia bihai</i> (L.) L. | N South America, West Indies |
| <i>Heliconia humilis</i> (Aubl.) Jacq. | N South America, West Indies |
| <i>Heliconia</i> L. sp. | tropical Americas, certain islands of W Pacific, Maluku |

Tab. 2. – cont.

| Plant taxa ¹ | Distribution ² |
|---|--|
| Hypoxidaceae | |
| <i>Curculigo latifolia</i> Dryand. ex W.T.Aiton | E Asia: S China, Bangladesh, Andaman Islands, Myanmar, Thailand, Vietnam, Malaysia, Indonesia, Philippines |
| Lamiaceae | |
| * <i>Salvia splendens</i> Sellow ex J.A. Schultes | Brazil |
| Malvaceae | |
| unidentified sp. | |
| Marantaceae | |
| <i>Calathea ornata</i> (Linden ex Lem.) Körn. | Colombia, Venezuela |
| <i>Calathea zebrina</i> (Sims) Lindl. | SE Brazil |
| <i>Ctenanthe oppenheimiana</i> (E.Morr) K.Schum | Brazil |
| <i>Maranta leuconeura</i> E.Morren | Brazil |
| <i>Maranta</i> L. sp. | tropical Central and South America, West Indies |
| Melastomataceae | |
| * <i>Medinilla</i> Gaudich. sp. | tropical regions of Africa, Madagascar, S Asia, W Pacific Ocean islands |
| * <i>Medinilla magnifica</i> Lindl. | Philippines |
| Moraceae | |
| * <i>Artocarpus</i> J.R.Forster & G.Forster sp. | SE Asia, Pacific islands |
| <i>Artocarpus heterophyllus</i> Lam. | parts of S and SE Asia |
| * <i>Ficus elastica</i> Roxb. ex Hornem. 1819 | NE India, Nepal, Bhutan, Burma, China, Malaysia, Indonesia |
| <i>Ficus pumila</i> L. | E Asia (China, Japan, Vietnam) |
| Musaceae | |
| <i>Musa velutina</i> H.Wendl. & Drude | India, Myanmar |
| Nelumbonaceae | |
| * <i>Nelumbo nucifera</i> Gaertn. | tropical Asia and N Australia |
| Nymphaeaceae | |
| <i>Nymphaea</i> L. x hybrida | cosmopolitan distribution |
| <i>Nymphaea zanzibariensis</i> Casp. | Galapagos |
| * <i>Victoria regia</i> Lindl. | Amazon River basin |
| Orchidaceae | |
| <i>Cattleya</i> Lindl. sp. | from Costa Rica and the Lesser Antilles south to Argentina |
| <i>Dendrobium</i> Sw. sp. | SE Asia, Philippines, Indonesia, Australia, New Guinea, Vietnam, Pacific islands |
| <i>Paphiopedilum</i> Pfitzer sp. | SE Asia, the Indian Subcontinent, S China, New Guinea, the Solomon and Bismarck Islands |
| <i>Phalaenopsis</i> Blume sp. | S China, India, SE Asia, New Guinea, the Bismarck Archipelago, Queensland |
| * <i>Stanhopea oculata</i> (Lodd.) Lindl. | from Mexico to Colombia and SE Brazil |
| <i>Vanda</i> Gaud. ex Pfitzer sp. 1 | E Asia, SE Asia, New Guinea, Queensland, W Pacific islands |
| <i>Vanda</i> Gaud. ex Pfitzer sp. 2 | E Asia, SE Asia, New Guinea, Queensland, W Pacific islands |
| <i>Vanilla aphylla</i> Blume | SE Asia |
| <i>Vanilla planifolia</i> Jacks. ex Andrews | Mexico |

Tab. 2. – cont.

| Plant taxa ¹ | Distribution ² |
|--|--|
| Oxalidaceae | |
| <i>Averrhoa carambola</i> L. | SE Asia, Indian Subcontinent |
| Pandanaceae | |
| * <i>Pandanus tectorius</i> Parkinson ex Du Roi | SE Asia, E Australia, the Pacific Islands |
| Passifloraceae | |
| <i>Passiflora caerulea</i> L. | South America (Argentina, Chile, Paraguay, Uruguay and Brazil) |
| * <i>Passiflora quadrangularis</i> L. | Neotropics |
| * <i>Passiflora racemosa</i> Brot. | Brazil |
| <i>Passiflora</i> L. sp. | Central and South America, SE Asia, New Guinea, Australia, New Zealand |
| Piperaceae | |
| <i>Peperomia</i> Ruiz & Pav. sp. | tropical and subtropical regions of the world |
| <i>Piper ornatum</i> N.E.Br. | Indonesia |
| Plantaginaceae | |
| <i>Russelia equisetiformis</i> Schlecht. & Cham. | Mexico, Guatemala |
| Poaceae | |
| <i>Oryza sativa</i> L. | China |
| <i>Saccharum officinarum</i> L. | SE Asia |
| Polygonaceae | |
| <i>Antigonon leptopus</i> Hook. & Arn. | Mexico |
| Pontederiaceae | |
| * <i>Eichhornia crassipes</i> (Mart.) Solms | Amazon basin |
| Scrophulariaceae | |
| + <i>Buddleja davidii</i> Franch. | central China, Japan |
| Solanaceae | |
| * <i>Nicotiana tabacum</i> L. | tropical and subtropical America |
| Sterculiaceae | |
| * <i>Theobroma cacao</i> L. | Central and South America |
| Urticaceae | |
| <i>Pellionia pulchra</i> N.E. Br. | S Vietnam |
| <i>Soleirolia soleirolii</i> (Req.) Dandy | N Mediterranean region around Italy and nearby islands |
| Verbenaceae | |
| <i>Clerodendrum thomsoniae</i> Balf. | tropical W Africa |
| + <i>Lantana camara</i> L. | American tropics |
| Vitaceae | |
| <i>Cissus discolor</i> Blume | temperate and tropical SE Asia |
| Zingiberaceae | |
| <i>Alpinia purpurata</i> K.Schum. | Malaysia |
| * <i>Hedychium</i> J.Koenig sp. | SE Asia |

¹Some plants (+) are only temporarily placed to the Victoria greenhouse of BG PJŠU in time of butterfly exhibitions. These plants (potted ones or their cuttings with flowers) should serve as additional food sources (nectar) for adult butterflies. Other plants (majority) have been within permanent compositions. However some changes took place during the history of living butterfly exhibits (some plant taxa have been removed (*) and other ones have been additionally planted). This table is a complete list of all registered plant taxa registered in this greenhouse between the years 2008 and 2015. Actual situation (2015) in the Victoria greenhouse is represented by remaining plant taxa without marks (+, *).

²Data on distribution of individual taxa in the wild are adapted according to HASSLER (2015a, 2015b)



Fig. 2. All 182 lepidopteran species in exhibits in BG PJŠU. The order (from top left to bottom right, row by row) is the same as in Tab. 3.

Tab. 3. Butterflies and moths in BG PJŠU during annual exhibitions from 2008 to 2015.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|--|--|
| Geometridae | | | |
| Geometrinae | | | |
| Dysphaniini | | | |
| 1. <i>Dysphania malayanus</i> (Guérin-Méneville, 1843) | Peninsular Malaysia, Sumatra, Borneo, Palawan | Rhizophoraceae (<i>Carallia</i>) | HOLLOWAY (1996) |
| 2. <i>Dysphania militaris</i> (Linnaeus, 1758) | tropical regions of S and SE Asia: India, S China, Thailand, Sumatra, Borneo, Bali | Myrtaceae (<i>Rhodomyrtus</i>), Rhizophoraceae (<i>Carallia</i> , <i>Kandelia</i>) | HOLLOWAY (1996), ROBINSON et al (2010), SVELA (2015) |
| 3. <i>Dysphania transducta</i> (Walker, 1861) | Myanmar, Peninsular Malaysia, Sumatra, Borneo | Rhizophoraceae (<i>Carallia</i>) | HOLLOWAY (1996) |
| Lycaenidae | | | |
| Lycaeninae | | | |
| Eumaeini | | | |
| 4. <i>Eumaeus minyas</i> (Hübner, 1809) | Colombia, Peru, Bolivia, C Brazil | Zamiaceae (<i>Zamia</i>) | PYLE (1981), WARREN et al (2013), SVELA (2015) |
| Nymphalidae | | | |
| Biblidinae | | | |
| Ageroniini | | | |
| 5. <i>Hamadryas amphinome</i> (Linnaeus, 1767) | Mexico, Guatemala, Costa Rica, Panama, Colombia, Brazil, Guianas, Bolivia, Peru, Cuba | Aristolochiaceae (<i>Aristolochia</i>), Asteraceae (<i>Eupatorium</i>), Euphorbiaceae (<i>Dalechampia</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 6. <i>Hamadryas feronia</i> (Linnaeus, 1758) | S USA, Mexico, Guatemala, Honduras, Costa Rica, Venezuela, Colombia, Suriname, Ecuador, Peru, Brazil, Paraguay, Trinidad | Arecaceae (<i>Syagrus</i>), Euphorbiaceae (<i>Dalechampia</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 7. <i>Hamadryas laodamia</i> (Cramer, 1777) | Mexico, Honduras, Costa Rica, Panama, Colombia, Venezuela, Suriname, Bolivia, Brazil, Peru, Trinidad | Euphorbiaceae (<i>Dalechampia</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|---|--|---|
| Biblidini | | | |
| 8. <i>Biblis hyperia</i> (Cramer, 1779) | SW USA, Mexico, El Salvador, Costa Rica, Ecuador, Peru, Brazil, Paraguay, Caribbean islands (Hispaniola, Mona, Puerto Rico, Culebra, Virgin Islands, St. Lucia, Montserrat, Guadeloupe) | Euphorbiaceae (<i>Acidoton</i> , <i>Tragia</i>), Urticaceae (<i>Laportea</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |
| Epicaliini | | | |
| 9. <i>Catonephele numilia</i> (Cramer, 1775) | Mexico, El Salvador, Costa Rica, Panama, Colombia, Venezuela, Suriname, Ecuador, Peru, Brazil, Argentina, Paraguay, Trinidad | Euphorbiaceae (<i>Alchornea</i> , <i>Aparisthmium</i> , <i>Conceveiba</i>), Lauraceae (<i>Nectandra</i>), Verbenaceae (<i>Citharexylum</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |
| 10. <i>Catonephele orites</i> Stichel, 1899 | Costa Rica, Panama, Colombia, Ecuador | Euphorbiaceae (<i>Alchornea</i>) | ROBINSON et al (2010), WARREN et al (2013) |
| 11. <i>Myscelia cyaniris</i> Doubleday, 1848 | Mexico, Honduras, Costa Rica, Panama, Venezuela, Ecuador, Peru | Euphorbiaceae (<i>Adelia</i> , <i>Dalechampia</i>) | SAVELA (2015) |
| 12. <i>Myscelia ethusa</i> (Doyère, 1840) | S Texas, Mexico, Guatemala, Honduras, Nicaragua, Costa Rica | Euphorbiaceae (<i>Dalechampia</i>) | RIES (2012), WARREN et al (2013) |
| 13. <i>Nessaea aglaura</i> (Doubleday, 1848) | Mexico, Costa Rica, Panama, Colombia, Venezuela, Ecuador | Asteraceae (<i>Mikania</i>), Euphorbiaceae (<i>Alchornea</i> , <i>Dalechampia</i> , <i>Plukenetia</i>), Rhamnaceae (<i>Gouania</i>) | ROBINSON et al (2010), WARREN et al (2013), MORISSON (2014), SAVELA (2015) |
| Danainae | | | |
| Danaini | | | |
| 14. <i>Danaus chrysippus</i> (Linnaeus, 1758) | Tunisia, Algeria, Morocco, Egypt, Mauritania, Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Mali, Ivory Coast, Ghana, Burkina Faso, Togo, Benin, Nigeria, Niger, Cameroon, Equatorial Guinea, Gabon, Congo, Angola, Democratic Republic of Congo, Central African Republic, Sudan, Uganda, Ethiopia, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, | Apocynaceae (<i>Apocynum</i> , <i>Araujia</i> , <i>Asclepias</i> , <i>Aspidoglossum</i> , <i>Calotropis</i> , <i>Caralluma</i> , <i>Ceropegia</i> , <i>Cryptolepis</i> , <i>Cynanchum</i> , <i>Gomphocarpus</i> , <i>Huernia</i> , <i>Ischnostemma</i> , <i>Kanahia</i> , <i>Leichardtia</i> , <i>Leptadenia</i> , <i>Marsdenia</i> , <i>Metaplexis</i> , <i>Orbea</i> , <i>Oxystelma</i> , <i>Pachycarpus</i> , <i>Pentarrhinum</i> , <i>Pentatropis</i> , <i>Pergularia</i> , <i>Periploca</i> , <i>Pleurostelma</i> , <i>Raphistemma</i> , <i>Secamone</i> , <i>Schizoglossum</i> , <i>Stapelia</i> , <i>Stathmostelma</i> , <i>Tylophora</i> , <i>Xysmalobium</i>), Convolvulaceae (<i>Ipomoea</i>), | WILLIAMS (2008), VAN DER HEYDEN (2010), ROBINSON et al (2010), GOSWAMI (2013), INAYOSHI (2015), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|---|---|--|
| | Lesotho, Swaziland, Madagascar, Comoro Islands, Mauritius, Rodrigues, Reunion, Bourbon, Seychelles, Aldabra, St Helena; Arabia (Yemen, Saudi Arabia, Oman, United Arab Emirates), Iran, Iraq, Palestine, Lebanon, Turkey, India, Sri Lanka, Andaman Islands, Pakistan, Afghanistan, China, Taiwan, Japan, Malaysia, Thailand, Laos, Myanmar, Vietnam, Philippines, Borneo, Java, Sulawesi, Lesser Sunda Islands, Timor, New Guinea, Australia, Fiji, New Hebrides, Cyprus, Malta, Greece, Italy, Spain, Cape Verde Islands, Canary Islands, | Euphorbiaceae (<i>Euphorbia</i>), Malvaceae, Moraceae (<i>Ficus</i>), Plumbaginaceae (<i>Dyerophytum</i>), Poaceae, Rosaceae (<i>Rosa</i>), Sapindaceae (<i>Lepisanthes</i>), Scrophulariaceae (<i>Antirrhinum</i>). | |
| 15. <i>Danaus plexippus</i> (Linnaeus, 1758) | native to North America (Canada, USA, Mexico), Central America (Nicaragua), South America (Venezuela, French Guiana, Suriname, Guyana, Ecuador, Peru, Brazil), Trinidad, Tobago, Puerto Rico, Cuba, Hispaniola, Bahamas, Virgin Islands, Caymans, Galapagos; expanded to Australia, New Zealand, many Pacific islands (e.g. Hawaii, Samoa, Fiji, New Caledonia), Indian ocean islands (Mauritius, Reunion) and a few places in Europe (Portugal, Spain, Canary Islands) and Africa (Morocco) | Apocynaceae (<i>Apocynum</i> , <i>Araujia</i> , <i>Asclepias</i> , <i>Calotropis</i> , <i>Ceropegia</i> , <i>Cynanchum</i> , <i>Gomphocarpus</i> , <i>Gonolobus</i> , <i>Marsdenia</i> , <i>Matelea</i> , <i>Orbea</i> , <i>Oxypetalum</i> , <i>Oxystelma</i> , <i>Raphistemma</i> , <i>Sarcostemma</i> , <i>Stapelia</i> , <i>Stephanotis</i>), Convolvulaceae (<i>Ipomoea</i>), Euphorbiaceae (<i>Euphorbia</i>), Malvaceae (<i>Gossypium</i>), Rutaceae (<i>Citrus</i>), Sapotaceae (<i>Manilkara</i>) | BROWER (2007), WILLIAMS (2008), ROBINSON et al (2010), WARREN et al (2013), ZHAN et al (2014), SAVELA (2015) |
| 16. <i>Euploea core</i> (Cramer, 1780) | India, Sri Lanka, Nepal, S China, Taiwan, Malaysia, Myanmar, Thailand, Laos, Cambodia, Vietnam, Sumatra, Borneo, Sulawesi, Java, Bali, Bismarck Archipelago, Solomon Islands, Andaman Islands, Nicobars, New Guinea, Australia | Apocynaceae (<i>Adenium</i> , <i>Allamanda</i> , <i>Anodendron</i> , <i>Apocynum</i> , <i>Asclepias</i> , <i>Brachystelma</i> , <i>Calotropis</i> , <i>Carissa</i> , <i>Cerbera</i> , <i>Ceropegia</i> , <i>Cryptolepis</i> , <i>Cryptostegia</i> , <i>Cynanchum</i> , <i>Gomphocarpus</i> , <i>Gunnessia</i> , <i>Gymnanthera</i> , <i>Hemidesmus</i> , <i>Holarthena</i> , <i>Hoya</i> , <i>Ichnocarpus</i> , <i>Leichardtia</i> , <i>Mandevilla</i> , <i>Marsdenia</i> , <i>Nerium</i> , <i>Parsonsia</i> , <i>Plumeria</i> , <i>Rhynchodia</i> , <i>Sarcolobus</i> , <i>Sarcostemma</i> , <i>Secamone</i> , <i>Stephanotis</i> , <i>Toxocarpus</i> , <i>Trachelospermum</i> , <i>Tylophora</i>), Cannabidaceae (<i>Aphananthe</i>), Moraceae (<i>Ficus</i> , <i>Streblus</i>), Rubiaceae (<i>Morinda</i>), Ulmaceae (<i>Aphananthe</i>) | ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|---|---|
| 17. <i>Euploea mulciber</i> (Cramer, 1777) | India, Bhutan, Myanmar, Thailand, Laos, Cambodia, Vietnam, S China, Taiwan, Philippines, Malaysia, Sumatra, Borneo, Sulawesi, Java, Bali | Apocynaceae (<i>Ichnocarpus</i> , <i>Marsdenia</i> , <i>Nerium</i> , <i>Pottsia</i> , <i>Strophanthus</i> , <i>Toxocarpus</i>), Aristolochiaceae (<i>Aristolochia</i>), Convolvulaceae (<i>Argyreia</i>), Moraceae (<i>Ficus</i> , <i>Streblus</i>) | ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), |
| 18. <i>Euploea phaenareta</i> (Schaller, 1785) | Sri Lanka, India, Burma, Thailand, Vietnam, the Malay Peninsula, Sumatra, Java, Borneo, Philippines, Moluccas, New Guinea, Australia, Bismarck Islands | Apocynaceae (<i>Cerbera</i> , <i>Plumeria</i>), Moraceae (<i>Ficus</i>) | ROBINSON et al (2010), DAY (2015), SVELA (2015) |
| 19. <i>Idea leuconoe</i> Erichson, 1834 | W Malaysia, Thailand, Taiwan, Japan, Sumatra, Borneo, Java, Singapore, Philippines | Apocynaceae (<i>Cynanchum</i> , <i>Parsonsia</i> , <i>Tylophora</i>) | ROBINSON et al (2010), HOSKINS (2015), SVELA (2015) |
| 20. <i>Ideopsis juvena</i> (Cramer, 1777) | Malay Peninsula, Sumatra, Java, Borneo, Sulawesi, Lesser Sunda Islands, Philippines, Moluccas, New Guinea, Bismarck Archipelago, Solomon Islands | Apocynaceae (<i>Cynanchum</i> , <i>Gymnema</i> , <i>Heterostemma</i> , <i>Parsonsia</i> , <i>Pergularia</i> , <i>Telosma</i>), Piperaceae (<i>Piper</i>) | VANE-WRIGHT & DE JONG (2003), SARI et al (2015), SVELA (2015) |
| 21. <i>Ideopsis similis</i> (Linnaeus, 1758) | Sri Lanka, Vietnam, Thailand, Laos, Cambodia, Malaysia, Myanmar, Nicobars, Sumatra, S China, Taiwan, Japan | Apocynaceae (<i>Cryptolepis</i> , <i>Cynanchum</i> , <i>Gymnema</i> , <i>Marsdenia</i> , <i>Parsonsia</i> , <i>Tylophora</i> , <i>Vincetoxicum</i>), Menispermaceae (<i>Cocculus</i> , <i>Diploclisia</i>) | ROBINSON et al (2010), DAY (2015), INAYOSHI (2015), SVELA (2015) |
| 22. <i>Lycorea halia</i> (Hübner, 1816) | S USA, Mexico, El Salvador, Belize, Colombia, Venezuela, Suriname, Ecuador, Peru, Brazil, larger Caribbean islands (Cuba, Hispaniola, Jamaica, Puerto Rico, St. Lucia, Trinidad) | Araliaceae (<i>Hedera</i>), Apocynaceae (<i>Asclepias</i>), Caricaceae (<i>Carica</i> , <i>Jacaratia</i>), Hemerocallidaceae (<i>Hemerocallis</i>), Moraceae (<i>Ficus</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) |
| 23. <i>Tirumala septentrionis</i> (Butler, 1874) | India, Sri Lanka, Nepal, Bhutan, China, Taiwan, Myanmar, Laos, Cambodia, Vietnam, Thailand, Malaysia, Singapore, Java, Borneo, Lesser Sunda Islands,, Philippines, | Apocynaceae (<i>Cosmostigma</i> , <i>Dregea</i> , <i>Heterostemma</i> , <i>Parsonsia</i> , <i>Vallis</i> , <i>Tylophora</i>), Menispermaceae (<i>Cocculus</i>) | NAIR (2005), ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SVELA (2015) |
| Ithomiini | | | |
| 24. <i>Godyrus nero</i> (Hewitson, 1855) | Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Ecuador | Solanaceae (<i>Cestrum</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 25. <i>Mechanitis polymnia</i> (Linnaeus, 1758) | Mexico, Guatemala, Honduras, Belize, Costa Rica, Panama, Colombia, Venezuela, Suriname, Ecuador, Bolivia, Peru, Brazil, Trinidad | Apocynaceae, Solanaceae (<i>Brugmansia</i> , <i>Brunfelsia</i> , <i>Cyphomandra</i> , <i>Lycopersicon</i> , <i>Solanum</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|---|---|---|
| 26. <i>Methona confusa</i> Butler, 1873 | Panama, Colombia, Venezuela, Guayana, Ecuador, Peru, Bolivia, Brazil, Argentina | Solanaceae (<i>Brufelsia</i>) | BECCALONI (1995), ROBINSON et al (2010), SAVELA (2015) |
| 27. <i>Tithorea harmonia</i> (Cramer, 1777) | Mexico, Honduras, El Salvador, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guayana, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Trinidad | Apocynaceae (<i>Echites</i> , <i>Mandevilla</i> , <i>Mesechites</i> , <i>Prestonia</i>) | FREITAS et al (2001), ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |
| 28. <i>Tithorea tarricina</i> Hewitson, 1858 | Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Bolivia | Apocynaceae (<i>Echites</i> , <i>Prestonia</i>), Solanaceae (<i>Markea</i>) | ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |
| Heliconiinae | | | |
| Acraeini | | | |
| 29. <i>Acraea violae</i> (Fabricius, 1793) | India, Sri Lanka, Bangladesh, Myanmar, Thailand, Laos, Cambodia, Vietnam | Cucurbitaceae, Loganiaceae, Malvaceae (<i>Hibiscus</i>), Moraceae (<i>Castilla</i>), Passifloraceae (<i>Adenia</i> , <i>Passiflora</i>), Turneraceae (<i>Turnera</i>), Verbenaceae (<i>Vitex</i>), Violaceae (<i>Hybanthus</i> , <i>Viola</i>) | DAS et al (2010), ROBINSON et al (2010), KHOT & GAIKWAD (2011), HOSKINS (2015), INAYOSHI (2015), |
| 30. <i>Cethosia biblis</i> (Drury, 1773) | India, Bhutan, Nepal, China, Thailand, Laos, Vietnam, Myanmar, Malaysia, Philippines, Sumatra, Borneo, Java, Sulawesi, Bali, Ambon, Serang, Moluccas, Andaman Islands | Passifloraceae (<i>Adenia</i> , <i>Passiflora</i>) | VANE-WRIGHT & DE JONG, ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |
| 31. <i>Cethosia cyane</i> (Drury, 1773) | India, Bhutan, Myanmar, S China, Thailand, Laos, Cambodia, Vietnam | Commelinaceae (<i>Commelina</i>), Convolvulaceae (<i>Ipomoea</i>), Euphorbiaceae (<i>Ricinus</i>), Passifloraceae (<i>Adenia</i> , <i>Passiflora</i>), Verbenaceae (<i>Duranta</i>) | ROBINSON et al (2010), INAYOSHI (2015), NEUBAUER (2015), SAVELA (2015) |
| Heliconiini | | | |
| 32. <i>Agraulis vanillae</i> (Linnaeus, 1758) | S USA, Mexico, Costa Rica, Panama, Venezuela, Suriname, French Guiana, Peru, Brazil, Paraguay, Uruguay, Argentina, Antilles, Bahamas, Galapagos, Hawaii | Caprifoliaceae (<i>Lonicera</i>), Passifloraceae (<i>Passiflora</i>), Tiliaceae (<i>Corchorus</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|--|--|
| 33. <i>Dione juno</i> (Cramer, 1779) | Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Suriname, Ecuador, Peru, Paraguay, Antilles | Passifloraceae (<i>Passiflora</i>). | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 34. <i>Dryadula phaetusa</i> (Linnaeus, 1758) | S USA, Mexico, Nicaragua, Costa Rica, Panama, Suriname, French Guiana, Brazil, Bolivia | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015) |
| 35. <i>Dryas iulia</i> (Fabricius, 1775) | S USA, Mexico, Honduras, Costa Rica, Suriname, Ecuador, Bolivia, Caribbean Islands (Cuba, Hispaniola, Jamaica, Puerto Rico, St. Thomas, Montserrat, Guadeloupe, St. Lucia, S. Vincent, St. Kitts, Grenada, Martinique, Bahamas, Cayman Islands and others) | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) |
| 36. <i>Eueides isabella</i> (Stoll, 1781) | S USA, Mexico, Honduras, Guatemala, Nicaragua, Panama, Colombia, Venezuela, Suriname, Ecuador, Peru, Brazil, West Indies (Cuba, Puerto Rico, Hispaniola) | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 97 37. <i>Heliconius antiochus</i> (Linnaeus, 1767) | Panama, Colombia, Venezuela, Guayana, Suriname, French Guiana, Peru, Bolivia, Brazil | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), CAST (2015) |
| 38. <i>Heliconius atthis</i> Doubleday, 1847 | Ecuador | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), CAST (2015) |
| 39. <i>Heliconius charithonia</i> (Linnaeus, 1767) | S USA, Mexico, Guatemala, Belize, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Caribbean Islands (Cuba, Hispaniola, Jamaica, Bahamas, Puerto Rico, Virgin Islands, St. Kitts, Antigua and others) | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), WARREN et al (2013), CAST (2015) |
| 40. <i>Heliconius cydno</i> (Doubleday, 1847) | Mexico, Guatemala, Belize, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), CAST (2015) |
| 41. <i>Heliconius erato</i> (Linnaeus, 1758) | S USA, Mexico, Guatemala, Belize, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Bolivia, Guayana, Suriname, French Guiana, Brazil, Paraguay, Argentina, Uruguay, Trinidad, Tobago | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), WARREN et al (2013), CAST (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|---|--|
| 42. <i>Heliconius hecale</i> (Fabricius, 1776) | Mexico, Guatemala, Belize, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Bolivia, Guayana, Suriname, French Guiana, Brazil | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), CAST (2015) |
| 43. <i>Heliconius himera</i> Hewitson, 1867 | Ecuador, Peru | Passifloraceae (<i>Passiflora</i>) | JIGGINS (2008), CAST (2015) |
| 44. <i>Heliconius ismenius</i> Latreille, 1817 | Mexico, Guatemala, Belize, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, French Guiana | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), WARREN et al (2013), CAST (2015) |
| 45. <i>Heliconius melpomene</i> (Linnaeus, 1758) | Mexico?, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Bolivia, Guayana, Suriname, French Guiana, Brazil, Trinidad, Tobago | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), CAST (2015), SAVELA (2015) |
| 46. <i>Heliconius numata</i> (Cramer, 1780) | Guatemala?, Colombia, Venezuela, Ecuador, Peru, Bolivia, Guayana, Suriname, French Guiana, Brazil | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), CAST (2015), SAVELA (2015) |
| 47. <i>Heliconius sara</i> (Fabricius, 1793) | Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Bolivia, Guayana, Suriname, French Guiana, Brazil, Argentina, Trinidad | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), CAST (2015), SAVELA (2015) |
| 48. <i>Laparus doris</i> (Linnaeus, 1771) | Mexico, Honduras, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Guayana, Suriname, French Guiana, Peru, Brazil, Bolivia, Trinidad | Passifloraceae (<i>Passiflora</i>) | ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |
| 49. <i>Philaethria dido</i> (Linnaeus, 1763) | Mexico, Nicaragua, Panama, Colombia, Guianas?, Brazil | Passifloraceae (<i>Passiflora</i>) | GODMAN & SALVIN (1879-1901), ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |
| Vagrantini | | | |
| 50. <i>Phalanta phalantha</i> (Drury, 1773) | SW Arabia, Socotra, India, Sri Lanka, S China, Taiwan, Myanmar, Malaysia, Japan, Sumatra, Borneo, Sulawesi, Java, Lesser Sunda Islands, | Acanthaceae (<i>Barleria</i>), Anacardiaceae (<i>Mangifera</i>), Asteraceae (<i>Tridax</i>), Bixaceae, Celastraceae (<i>Maytenus</i>), Flacourtiaceae (<i>Dovyalis</i> , <i>Flacourtia</i> , | VANE-WRIGHT & DE JONG (2003), WILLIAMS (2008), |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources | |
|--|---|---|--|---|
| | Philippines, N Australia, Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Burkina Faso, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Central African Republic, Angola, Democratic Republic of Congo, Sudan, Ethiopia, Uganda, Rwanda, Burundi, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Lesotho, Madagascar, Seychelles, Aldabra, Comoro Islands, Mauritius, Reunion | <i>Oncoba</i> , <i>Trimeria</i> , <i>Xylosma</i>), Loranthaceae (<i>Loranthus</i>), Myrtaceae (<i>Melaleuca</i>), Picrodendraceae (<i>Petalostigma</i>), Primulaceae (<i>Androsace</i>), Rubiaceae (<i>Canthium</i> , <i>Coffea</i> , <i>Ixora</i>), Salicaceae (<i>Populus</i> , <i>Salix</i> , <i>Scolopia</i>), Smilacaceae (<i>Smilax</i>), Violaceae (<i>Viola</i>) | ROBINSON et al (2010), HOSKINS (2015), SVELA (2015) | |
| 51. <i>Vindula dejone</i> (Erichson, 1834) | Thailand, Laos, Cambodia, Vietnam, Malaysia, Philippines, Sumatra, Java, Borneo, Sulawesi, Lesser Sunda Islands, Moluccas | Passifloraceae (<i>Adenia</i> , <i>Passiflora</i>) | VANE-WRIGHT & DE JONG (2003), ROBINSON et al (2010), INAYOSHI (2015), SVELA (2015) | |
| <hr/> | | | | |
| 66 | Charaxinae | | | |
| | Anaeini | | | |
| | 52. <i>Consul electra</i> Westwood, 1850 | Mexico, Belize, Guatemala, Nicaragua, Costa Rica, Panama | Piperaceae (<i>Piper</i>) | GODMAN & SALVIN (1879-1901), MUYSHONDT (1976), SVELA (2015) |
| | 53. <i>Consul fabius</i> (Cramer, 1776) | Mexico, Costa Rica, Panama, Colombia, Venezuela, Suriname, French Guiana, Ecuador, Brazil, Peru, Bolivia, Trinidad | Piperaceae (<i>Piper</i>) | MUYSHONDT (1974), WARREN et al (2013), SVELA (2015) |
| | 54. <i>Fountainea eurypyle</i> (C. & R. Felder, 1862) | Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Bolivia, Peru | Euphorbiaceae (<i>Croton</i>), Flacourtiaceae (<i>Casearia</i>) | ROBINSON et al (2010), SVELA (2015) |
| | 55. <i>Fountainea nobilis</i> (Bates, 1864) | Mexico, Guatemala, El Salvador, Costa Rica, Panama, Colombia, Venezuela, Peru | Euphorbiaceae (<i>Croton</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 56. <i>Hypna clytemnestra</i> (Cramer, 1777) | Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Suriname, Peru, Bolivia, Brazil, Argentina, Cuba | Euphorbiaceae (<i>Croton</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) | |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|---|--|
| Charaxini | | | |
| 57. <i>Charaxes brutus</i> (Cramer, 1779) | Senegal, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Equatorial Guinea, Central African Republic, Gabon, Congo, Angola, Democratic Republic of Congo, Uganda, Sudan, Kenya, Rwanda, Burundi, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland | Euphorbiaceae (<i>Flueggea</i> , <i>Securinega</i>), Meliaceae (<i>Ekebergia</i> , <i>Entandrophragma</i> , <i>Khaya</i> , <i>Lepidotrichilia</i> , <i>Melia</i> , <i>Trichilia</i> , <i>Turraea</i>), Melianthaceae (<i>Bersama</i>), Sapindaceae (<i>Allophylus</i> , <i>Blighia</i>), Tiliaceae (<i>Grewia</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 58. <i>Charaxes candiope</i> (Godart, 1824) | Senegal, Gambia, Guinea, Sierra Leone, Ivory Coast, Ghana, Nigeria, Cameroon, Ethiopia, Kenya, Tanzania, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland | Euphorbiaceae (<i>Croton</i>), Poaceae (<i>Pennisetum</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 59. <i>Charaxes castor</i> (Cramer, 1775) | Senegal, Gambia, Guinea-Bissau, Guinea, Burkina Faso, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Angola, Central African Republic, Democratic Republic of Congo, Uganda, Ethiopia, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, South Africa, Swaziland, Comoro Islands | Celastraceae (<i>Cassine</i> , <i>Elaeodendron</i> , <i>Gymnosporia</i> , <i>Maytenus</i> , <i>Pleurostylia</i>), Euphorbiaceae (<i>Bridelia</i> , <i>Croton</i> , <i>Tragia</i>), Fabaceae (<i>Afzelia</i> , <i>Bauhinia</i> , <i>Brachystegia</i> , <i>Cassia</i> , <i>Copaifera</i> , <i>Entada</i> , <i>Erythrina</i> , <i>Senna</i> , <i>Schotia</i>), Iridaceae (<i>Iris</i>), Lamiaceae (<i>Gmelina</i>), Malvaceae (<i>Hibiscus</i>), Poaceae (<i>Sorghum</i>), Ulmaceae (<i>Chaetachme</i> , <i>Trema</i>) | DICKSON & KROON (1978), WILLIAMS (2008), ROBINSON et al (2010) |
| 60. <i>Charaxes cithaeron</i> C. & R. Felder, 1859 | Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, South Africa, Swaziland | Acanthaceae (<i>Chaetacanthus</i> , <i>Crabbea</i>), Celastraceae (<i>Gymnosporia</i> , <i>Hippocratea</i> , <i>Maytenus</i>), Fabaceae (<i>Acacia</i> , <i>Afzelia</i> , <i>Albizia</i> , <i>Baphia</i> , <i>Craibia</i> , <i>Dalbergia</i> , <i>Leptoderris</i> , <i>Millettia</i> , <i>Philenoptera</i> , <i>Schotia</i>), Linaceae (<i>Hugonia</i>), Sapindaceae (<i>Deinbollia</i>), Sterculiaceae (<i>Cola</i>), Tiliaceae (<i>Grewia</i>), Ulmaceae (<i>Celtis</i> , <i>Chaetachme</i> , <i>Trema</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 61. <i>Charaxes etesipe</i> (Godart, 1824) | Senegal, Guinea, Sierra Leone, Liberia, Benin, Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Gabon, Congo, Angola, Central African Republic, | Bombacaceae (<i>Bombax</i> , <i>Ceiba</i>), Euphorbiaceae (<i>Croton</i> , <i>Ricinus</i> , <i>Tragia</i>), Erythroxylaceae (<i>Erythroxylum</i>), Fabaceae (<i>Afzelia</i> , <i>Cassia</i> , <i>Dalbergia</i> , | WOODHALL (2005), WILLIAMS (2008), ROBINSON et al (2010), |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|---|---|--|
| | Chad, Democratic Republic of Congo, Uganda, Sudan, Rwanda, Tanzania, Ethiopia, Kenya, Somalia, Democratic Republic of Congo, Angola, Mozambique, Malawi, Zimbabwe, Swaziland, South Africa, Madagascar | <i>Entada</i> , Phyllanthaceae (<i>Margaritaria</i> , <i>Phyllanthus</i> , <i>Securinega</i>), Polygalaceae (<i>Securidaca</i>), Rhamnaceae (<i>Maesopsis</i> , <i>Ventilago</i>) | SAVELA (2015) |
| 62. <i>Charaxes protoclea</i> Feisthamel, 1850 | Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Equatorial Guinea, Central African Republic, Gabon, Congo, Angola, Democratic Republic of Congo, Uganda, Kenya, Tanzania, Zambia, Malawi, Zimbabwe, Mozambique, South Africa | Fabaceae (<i>Azelia</i> , <i>Berlinia</i> , <i>Brachystegia</i> , <i>Bussea</i> , <i>Cassia</i> , <i>Julbernardia</i>), Myrtaceae (<i>Eugenia</i> , <i>Syzygium</i>), Poaceae (<i>Oxytenanthera</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 63. <i>Charaxes varanes</i> (Cramer, 1764) | Senegal, Gambia, Guinea-Bissau, Guinea, Burkina Faso, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Equatorial Guinea, Central African Republic, Sudan, Ethiopia, Yemen, Oman, Kenya, Tanzania, Zambia, Angola, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland | Anacardiaceae (<i>Rhus</i>), Sapindaceae (<i>Allophylus</i> , <i>Cardiospermum</i> , <i>Schmidelia</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 64. <i>Charaxes violetta</i> Grose-Smith, 1885 | Kenya, Tanzania, Malawi, Zimbabwe, Mozambique, South Africa | Fabaceae (<i>Azelia</i> , <i>Brachystegia</i>), Sapindaceae (<i>Blighia</i> , <i>Deinbollia</i> , <i>Paullinia</i>) | WILLIAMS (2008) |
| Euxanthini | | | |
| 65. <i>Euxanthe wakefieldi</i> (Ward, 1873) | Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, South Africa, Swaziland | Fabaceae (<i>Azelia</i>), Sapindaceae (<i>Blighia</i> , <i>Deinbollia</i> , <i>Lecaniodiscus</i> , <i>Phialodiscus</i> , <i>Sapindus</i>) | LARSEN (1996), WILLIAMS (2008), ROBINSON et al (2010) |
| Preponini | | | |
| 66. <i>Archaeoprepona demophon</i> (Linnaeus, 1758) | USA (Texas), Mexico, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Suriname, Bolivia, Brazil, Paraguay, Cuba, Hispaniola | Annonaceae (<i>Annona</i> , <i>Rollinia</i>), Connaraceae (<i>Rourea</i>), Convolvulaceae (<i>Maripa</i>), Lacistemataceae (<i>Lacistema</i>), Lauraceae (<i>Cinnamomum</i> , <i>Nectandra</i> , <i>Ocotea</i> , <i>Persea</i>), Malpighiaceae (<i>Malpighia</i>), Meliaceae (<i>Guarea</i>), Monimiaceae (<i>Mollinedia</i> , <i>Siparuna</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|---|--|--|
| 67. <i>Prepona laertes</i> (Hübner, 1811) | USA (Florida), Mexico, Guatemala, Honduras, Costa Rica, Panama, Colombia, Venezuela, Peru, Ecuador, Suriname, French Guiana, Bolivia, Brazil, Paraguay, Cuba, Trinidad | Fabaceae (<i>Andira</i> , <i>Inga</i>), Sapindaceae (<i>Melicoccus</i>) | ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |
| Limnitiidae | | | |
| Adoliadini | | | |
| 68. <i>Dophla evelina</i> (Stoll 1790) | India, Sri Lanka, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, China; Java, Sumatra, Borneo, Celebes, Sulawesi, Philippines | Anacardiaceae (<i>Anacardium</i>), Ebenaceae (<i>Diospyros</i>), Euphorbiaceae (<i>Antidesma</i>), Fagaceae (<i>Lithocarpus</i>) | ROBINSON et al (2010), INAYOSHI (2015), SAVELA (2015) |
| 69. <i>Euthalia aconthea</i> (Hewitson, 1874) | India, Sri Lanka, Thailand, Laos, Vietnam, Malaysia, S China, Philippines; Sumatra, Borneo, Java, Sulawesi, Bali, Lombok, Andamans | Anacardiaceae (<i>Anacardium</i> , <i>Mangifera</i>), Cucurbitaceae (<i>Bryonia</i>), Loranthaceae (<i>Loranthus</i> , <i>Scurrula</i>), Moraceae (<i>Morus</i> , <i>Streblus</i> , <i>Trophis</i>), Rosaceae (<i>Rosa</i>) | ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |
| 70. <i>Euthalia monina</i> (Moore, 1859) | India, S China, Thailand, Laos, Cambodia, Vietnam, Myanmar, Malaysia, Singapore, Sumatra, Borneo, Java, Bali, Lombok, Philippines | Dipterocarpaceae (<i>Shorea</i>), Ebenaceae (<i>Diospyros</i>), Euphorbiaceae (<i>Macaranga</i> , <i>Mallotus</i>), Melastomataceae (<i>Clidemia</i>) | ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |
| 71. <i>Lexias pardalis</i> Moore, 1878 | China, Laos, Vietnam, Thailand, Myanmar, India, Singapore, Philippines, Sumatra, Borneo | Hypericaceae (<i>Cratoxylum</i>) | TAN (2010), SAVELA (2015) |
| 72. <i>Tanaecia flora</i> Butler, 1873 | Thailand, Myanmar, Peninsular Malaysia | Lecythidaceae (<i>Careya</i>), Melastomataceae (<i>Melastoma</i>) | REIMAN GARDENS (2015), SAVELA (2015) |
| 73. <i>Tanaecia julii</i> Bougainville, 1837 | India, Bhutan, Myanmar, Cambodia, Thailand, Laos, Vietnam, China, W Malaysia, Sumatra | Sapotaceae (<i>Diploknema</i>) | ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |
| Limnitiidini | | | |
| 74. <i>Athyma perius</i> (Linnaeus, 1758) | India, S China, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, Java, Sumatra, Lombok | Phyllanthaceae (<i>Glochidion</i> , <i>Phyllanthus</i>) | ROBINSON et al (2010), INAYOSHI (2015), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|--|--|
| Parthenini | | | |
| 75. <i>Parthenos sylvia</i> (Cramer, 1776) | Sri Lanka, India, China, Myanmar, Thailand, Malaysia, Borneo, Sumatra, Sulawesi, Java, Bali, Philippines, Moluccas, New Guinea, Solomon Islands, Bismarck Archipelago, | Cucurbitaceae, Passifloraceae (<i>Adenia</i> , <i>Passiflora</i>), Mennispermaceae (<i>Tinospora</i>) | VANE-WRIGHT & DE JONG (2003), ROBINSON et al (2010), HOSKINS (2015) |
| Nymphalinae | | | |
| Coeini | | | |
| 76. <i>Historis odius</i> Fabricius, 1775 | S USA, Mexico, Guatemala, Belize, Costa Rica, Suriname, Peru, Bolivia, N Argentina, Greater Antilles (Hispaniola, Puerto Rico), Windward and Leeward Islands, Guadeloupe | Bignoniaceae (<i>Tabebuia</i>), Fabaceae (<i>Inga</i>), Ulmaceae (<i>Celtis</i> , <i>Trema</i>), Urticaceae (<i>Cecropia</i> , <i>Urtica</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) |
| Junoniini | | | |
| 77. <i>Hypolimnias antevorta</i> (Distant, 1880) | NE Tanzania | Urticaceae (<i>Laportea</i> , <i>Urera</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 78. <i>Hypolimnias bolina</i> (Linnaeus, 1758) | S Arabia, Socotra, India, Sri Lanka, S China, Taiwan, Japan, Myanmar, Thailand, Laos, Vietnam, Malaysia, Sumatra, Java, Borneo, Sulawesi, Lesser Sunda Islands, Timor, Moluccas, Philippines, New Guinea, Bismarck Archipelago, Solomon Islands, Christmas Island, Australia, New Zealand, New Caledonia, Fiji, French Polynesia, Madagascar | Apocynaceae, Acanthaceae (<i>Asystasia</i> , <i>Blechum</i> , <i>Eranthemum</i> , <i>Justicia</i> , <i>Pseuderanthemum</i> , <i>Rostellularia</i> , <i>Ruellia</i>), Amaranthaceae (<i>Achyranthes</i> , <i>Alternanthera</i>), Asteraceae (<i>Eclipta</i> , <i>Synedrella</i>), Commelinaceae (<i>Commelina</i>), Convolvulaceae (<i>Ipomoea</i> , <i>Merremia</i>), Fabaceae (<i>Desmodium</i> , <i>Phaseolus</i> , <i>Vigna</i>), Lamiaceae (<i>Perilla</i>), Malvaceae (<i>Abutilon</i> , <i>Malvastrum</i> , <i>Sida</i>), Moraceae (<i>Ficus</i>), Polygonaceae (<i>Persicaria</i> , <i>Polygonum</i>), Portulacaceae (<i>Portulaca</i>), Rubiaceae (<i>Richardia</i>), Tiliaceae (<i>Triumfetta</i>), Urticaceae (<i>Boehmeria</i> , <i>Elatostema</i> , <i>Laportea</i> , <i>Pipturus</i> , <i>Urtica</i>) | VANE-WRIGHT & DE JONG (2003), RAJAGOPALAN (2005), ROBINSON et al (2010), INAYOSHI (2015), SVELA (2015) |
| 79. <i>Hypolimnias misippus</i> (Linnaeus, 1764) | Senegal, Gambia, Guinea-Bissau, Guinea, Mali, Sierra Leone, Liberia, Ivory Coast, Burkina Faso, Ghana, Togo, Benin, Nigeria, Niger, Chad, Cameroon, Equatorial Guinea, Gabon, Congo, | Acanthaceae (<i>Asystasia</i> , <i>Blepharis</i> , <i>Dyschoriste</i> , <i>Justicia</i> , <i>Pseuderanthemum</i> , <i>Ruellia</i>), Amaranthaceae (<i>Amaranthus</i>), Arecaceae (<i>Elaeis</i>), Convolvulaceae (<i>Ipomea</i>), Crassulaceae (<i>Sedum</i>), | VANE-WRIGHT & DE JONG (2003), WILLIAMS (2008), ROBINSON et al (2010), SVELA (2015), |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources | |
|-------------------|---|--|--|---|
| | Central African Republic, Angola, Democratic Republic of Congo, Sudan, Uganda, Rwanda, Burundi, Ethiopia, Somalia, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Lesotho, Arabia (Yemen, Saudi Arabia, Oman, United Arab Emirates), Madagascar, Comoro Islands, Mauritius, Rodrigues, Reunion, Seychelles; India, Sri Lanka, Myanmar, Thailand, Laos, Vietnam, Taiwan, Japan, Indonesia (Java, Sulawesi, Moluccas), Australia; colonised Canary Islands, USA (Florida), West Indies, French Guiana, NE Brazil; migration into Egypt, Lebanon, Turkey | Fabaceae (<i>Vigna</i>), Malvaceae (<i>Abelmoschus</i> , <i>Abutilon</i> , <i>Gossypium</i> , <i>Hibiscus</i>), Moraceae (<i>Ficus</i>), Plantaginaceae (<i>Plantago</i>), Portulacaceae (<i>Portulaca</i> , <i>Talinum</i>), Rosaceae (<i>Prunus</i>), Urticaceae (<i>Elatostema</i>) | HERBISON-EVANS & CROSSLEY (2015), HOSKINS (2015), INAYOSHI (2015) | |
| 104 | 80. <i>Hypolimnas salmacis</i> (Drury, 1773) | Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Gabon, Congo, Angola, Equatorial Guinea, São Tomé and Príncipe, Democratic Republic of Congo, Uganda, Sudan, Ethiopia, Kenya, Tanzania | Urticaceae (<i>Laportea</i> , <i>Urera</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| | 81. <i>Junonia almana</i> (Linnaeus, 1758) | India, Sri Lanka, Thailand, Laos, Cambodia, Vietnam, Andaman and Nicobar Islands, Myanmar, Malaysia, Sumatra, Borneo, Sulawesi, Java, Philippines, S China, Taiwan, Japan | Acanthaceae (<i>Acanthus</i> , <i>Barleria</i> , <i>Blechnum</i> , <i>Dyschoriste</i> , <i>Hemigraphis</i> , <i>Hygrophila</i> , <i>Ruellia</i> , <i>Strobilanthes</i>), Amaranthaceae (<i>Alternanthera</i>), Balsaminaceae (<i>Hydrocera</i>), Gesneriaceae (<i>Gloxinia</i>), Fabaceae (<i>Mimosa</i>), Linderniaceae (<i>Lindernia</i>), Melastomataceae (<i>Osbeckia</i>), Onagraceae (<i>Ludwigia</i>), Plantaginaceae (<i>Plantago</i>), Poaceae (<i>Oryza</i> , <i>Pennisetum</i>), Scrophulariaceae (<i>Antirrhinum</i> , <i>Mimulus</i>), Verbenaceae (<i>Lippia</i> , <i>Phyla</i> , <i>Stachytarpheta</i>) | VANE-WRIGHT & DE JONG (2003), ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |
| | 82. <i>Junonia atlites</i> (Linnaeus, 1763) | India, Sri Lanka, Nepal, China, Thailand, Laos, Cambodia, Vietnam, Myanmar, W Malaysia, Sumatra, Java, Borneo, Sulawesi, Lesser Sunda Islands, Moluccas | Acanthaceae (<i>Barleria</i> , <i>Blechnum</i> , <i>Hygrophila</i> , <i>Justicia</i> , <i>Lepidagathis</i> , <i>Nelsonia</i> , <i>Pseuderanthemum</i> , <i>Ruellia</i> , <i>Strobilanthes</i>), Amaranthaceae (<i>Achyranthes</i> , <i>Alternanthera</i>), Poaceae (<i>Oryza</i>), Linderniaceae (<i>Lindernia</i>), Verbenaceae (<i>Phyla</i>) | VANE-WRIGHT & DE JONG (2003), ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|---|---|--|
| 83. <i>Junonia iphita</i> (Cramer, 1779) | Sri Lanka, India, China, Taiwan, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, Sumatra, Borneo, Java, Bali, Lesser Sunda Islands, Philippines, Maldives | Acanthaceae (<i>Hygrophila</i> , <i>Justicia</i> , <i>Lepidagathis</i> , <i>Strobilanthes</i>) | ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SVELA (2015) |
| 84. <i>Junonia oenone</i> (Linnaeus, 1758) | Senegal, Gambia, Guinea-Bissau, Guinea, Mali, Sierra Leone, Liberia, Ivory Coast, Burkina Faso, Ghana, Togo, Benin, Nigeria, Niger, Cameroon, Ethiopia, Tanzania, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Lesotho, S Arabia, Madagascar, Comoro Islands, Seychelles | Acanthaceae (<i>Adhatoda</i> , <i>Asystasia</i> , <i>Barleria</i> , <i>Brillantaisia</i> , <i>Dicliptera</i> , <i>Eremomastax</i> , <i>Hypoestes</i> , <i>Isoglossa</i> , <i>Justicia</i> , <i>Mackaya</i> , <i>Phaulopsis</i> , <i>Ruellia</i>) | LARSEN (1996), WILLIAMS (2008), ROBINSON et al (2010) |
| 85. <i>Junonia orithya</i> (Linnaeus, 1758) | Senegal, Gambia, Guinea-Bissau, Guinea, Mali, Sierra Leone, Liberia, Ivory Coast, Burkina Faso, Ghana, Togo, Benin, Nigeria, Niger, Tanzania, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Lesotho, Arabia, Madagascar, Seychelles, India, Sri Lanka, S China, Myanmar, Thailand, Malaysia, Singapore, Sumatra, Java, Borneo, Sulawesi, Lesser Sunda Islands, Timor, Philippines, Moluccas, New Guinea, New Britain, N Australia | Acanthaceae (<i>Acanthus</i> , <i>Asystasia</i> , <i>Barleria</i> , <i>Brunoniella</i> , <i>Hygrophila</i> , <i>Hypoestes</i> , <i>Justicia</i> , <i>Lepidagathis</i> , <i>Pseuderanthemum</i> , <i>Rostellularia</i> , <i>Thunbergia</i>), Annonaceae (<i>Annona</i>), Convolvulaceae (<i>Convolvulus</i> , <i>Ipomoea</i>), Lamiaceae (<i>Englerastrum</i> , <i>Plectranthus</i>), Orobanchaceae (<i>Graderia</i> , <i>Cycnium</i> , <i>Lindenbergia</i>), Plantaginaceae (<i>Plantago</i>), Scrophulariaceae (<i>Angelonia</i> , <i>Antirrhinum</i> , <i>Buchnera</i> , <i>Limosella</i> , <i>Misopates</i> , <i>Scrophularia</i> , <i>Striga</i>), Verbenaceae (<i>Lippia</i> , <i>Phyla</i> , <i>Stachytarpheta</i>), Violaceae (<i>Viola</i>) | WILLIAMS (2008), ROBINSON et al (2010), SVELA (2015) |
| 86. <i>Precis octavia</i> (Cramer, 1777) | Senegal, Guinea, Burkina Faso, Sierra Leone, Liberia, Ghana, Togo, Benin, Nigeria, Cameroon, Gabon, Congo, Central African Republic, Sudan, Ethiopia, Somalia, Uganda, Angola, Democratic Republic of Congo, Kenya, to Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland | Fabaceae (<i>Eriosema</i>), Lamiaceae (<i>Coleus</i> , <i>Basilicum</i> , <i>Englerastrum</i> , <i>Isodon</i> , <i>Platostoma</i> , <i>Plectranthus</i> , <i>Pycnostachys</i> , <i>Rabdosiella</i> , <i>Solenostemon</i> , <i>Tetradenia</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 87. <i>Protogoniomorpha anacardii</i> (Linnaeus, 1758) | Sierra Leone, Ivory Coast, Ghana, Togo, Nigeria, Central African Republic, Democratic Republic of Congo, Ethiopia, Kenya, Tanzania, Zambia, Mozambique, Zimbabwe, Botswana, South Africa, Swaziland, Yemen, Madagascar | Acanthaceae (<i>Asystasia</i> , <i>Brillantaisia</i> , <i>Eremomastax</i> , <i>Hypoestes</i> , <i>Isoglossa</i> , <i>Justicia</i> , <i>Mimulopsis</i> , <i>Paulowilhelmia</i> , <i>Phaulopsis</i>) | LARSEN (1996), WILLIAMS (2008), ROBINSON et al (2010) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|---|---|---|
| 88. <i>Protogoniomorpha parhassus</i> (Drury, 1782) | Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Central African Republic, Angola, Democratic Republic of Congo, Sudan, Uganda, Rwanda, Burundi, Ethiopia, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Namibia, South Africa, Swaziland | Acanthaceae (<i>Asystasia</i> , <i>Brillantaisia</i> , <i>Dicliptera</i> , <i>Eremomastax</i> , <i>Isoglossa</i> , <i>Justicia</i> , <i>Mimulopsis</i> , <i>Paulowilhelmia</i>) | LARSEN (1996), WILLIAMS (2008), ROBINSON et al (2010) |
| 89. <i>Salamis cacta</i> (Fabricius, 1793) | Senegal, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Central African Republic, Angola, Democratic Republic of Congo, Uganda, Rwanda, Ethiopia, Kenya, Tanzania, Malawi, Mozambique, Zimbabwe | Acanthaceae (<i>Asystasia</i>), Urticaceae (<i>Ureia</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| Kallimini | | | |
| 106 90. <i>Doleschallia bisaltide</i> (Cramer, 1777) | India, Sri Lanka, S China, Myanmar, Thailand, Laos, Vietnam, W Malaysia, Sumatra, Borneo, Palawan, Sulawesi, New Guinea, NE Australia, New Hebrides, Bismarck Archipelago, Solomon Islands, New Caledonia | Acanthaceae (<i>Asystasia</i> , <i>Blechum</i> , <i>Carlownrightia</i> , <i>Eranthemum</i> , <i>Graptophyllum</i> , <i>Phaulopsis</i> , <i>Pseuderanthemum</i> , <i>Ruellia</i> , <i>Strobilanthes</i>), Calycanthaceae (<i>Calycanthus</i>), Fabaceae (<i>Erythrina</i>), Moraceae (<i>Artocarpus</i>), Urticaceae (<i>Girardinia</i> , <i>Urtica</i>) | ROBINSON et al (2010), DAY (2015), HOSKINS (2015), INAYOSHI (2015), SVELA (2015) |
| 91. <i>Kallima inachus</i> (Doyère, 1840) | India, Myanmar, Laos, Thailand, Vietnam, W Malaysia, China, Taiwan, Japan | Acanthaceae (<i>Acanthus</i> , <i>Dicliptera</i> , <i>Hygrophila</i> , <i>Lepidagathis</i> , <i>Rostellularia</i> , <i>Strobilanthes</i>), Polygonaceae (<i>Polygonum</i>), Rosaceae (<i>Prunus</i>), Urticaceae (<i>Girardinia</i>) | YANG et al (2005), ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), SVELA (2015) |
| 92. <i>Kallima paralekta</i> (Horsfield, 1829) | Java, Sumatra | Acanthaceae (<i>Pseuderanthemum</i> , <i>Strobilanthes</i>) | ROBINSON et al (2010), SVELA (2015) |
| Nymphalini | | | |
| 93. <i>Colobura dirce</i> (Linnaeus, 1758) | Mexico, El Salvador, Guatemala, Costa Rica, Colombia, Venezuela, Guyana, French Guiana, Suriname, Ecuador, Peru, Bolivia, Brazil, Argentina, Paraguay, Puerto Rico, Cuba, Jamaica, Hispaniola, Trinidad | Cecropiaceae (<i>Cecropia</i>), Fabaceae (<i>Cassia</i>), Meliaceae (<i>Cabralea</i>), Musaceae (<i>Musa</i>), Myrtaceae (<i>Eucalyptus</i>), Rubiaceae (<i>Coffea</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|--|--|
| Victorini | | | |
| 94. <i>Anartia amathea</i> (Linnaeus, 1758) | Belize, Panama, Colombia, Venezuela, N Chile, Suriname, Bolivia, Brazil, Argentina, Paraguay, Uruguay, Lesser Antilles (Grenada, Barbados, Antigua, Trinidad, Tobago) | Acanthaceae (<i>Blechnum</i> , <i>Dicliptera</i> , <i>Justicia</i> , <i>Ruellia</i>), Lamiaceae (<i>Melissa</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) |
| 95. <i>Siproeta epaphus</i> (Latreille, 1813) | S USA (New Mexico, Texas), Mexico, Guatemala, Costa Rica, Venezuela, Ecuador, Peru, Brazil, Argentina | Acanthaceae (<i>Blechnum</i> , <i>Ruellia</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015) |
| 96. <i>Siproeta stelenes</i> (Linnaeus, 1758) | USA (Florida, Texas), Mexico, Honduras, Belize, Costa Rica, Panama, Ecuador, Peru, Brazil, Argentina, Bolivia, Antilles (Cuba, Jamaica, Hispaniola, Puerto Rico, St. Kitts, St. Croix), Cayman Islands | Acanthaceae (<i>Blechnum</i> , <i>Justicia</i> , <i>Pseuderanthemum</i> , <i>Ruellia</i> , <i>Strobilanthes</i>), Fabaceae (<i>Calliandra</i> , <i>Pithecellobium</i>), Lamiaceae (<i>Salvia</i>), Plantaginaceae (<i>Plantago</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) |
| Satyrinae | | | |
| Amathusiini | | | |
| 107 97. <i>Amathusia phidippus</i> (Linnaeus, 1763) | India, Myanmar, Peninsular Malaysia, Thailand, Cambodia, Vietnam, Indonesia (Sulawesi, Java, Sumatra, Borneo, Bali, Lombok), Philippines | Arecaceae (<i>Areca</i> , <i>Borassus</i> , <i>Cocos</i> , <i>Corypha</i> , <i>Cyrtostachys</i> , <i>Elaeis</i> , <i>Metroxylon</i> , <i>Nypa</i>), Musaceae (<i>Musa</i>) | ROBINSON et al (2010), INAYOSHI (2015), SVELA (2015) |
| Brassolini | | | |
| 98. <i>Brassolis isthmia</i> Bates, 1864 | Guatemala, Panama, Colombia, Ecuador, Bolivia | Arecaceae (<i>Cocos</i> , <i>Chamaedorea</i>) | YOUNG (1985), WARREN et al (2013), SVELA (2015) |
| 99. <i>Caligo atreus</i> Kollar, 1850 | Mexico, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru | Arecaceae (<i>Asterogyne</i> , <i>Geonoma</i> , <i>Reinhardtia</i>), Bromeliaceae (<i>Guzmania</i>), Costaceae (<i>Costus</i>), Cyclanthaceae, Heliconiaceae (<i>Heliconia</i>), Marantaceae (<i>Calathea</i>), Musaceae (<i>Musa</i>), Zingiberaceae (<i>Renealmia</i>) | PENZ et al (2000), WARREN et al (2013), SVELA (2015) |
| 100. <i>Caligo eurilochus</i> (Cramer, 1775) | Mexico, Panama, Colombia, Venezuela, Suriname, Peru, Bolivia, Brazil | Arecaceae (<i>Euterpe</i>), Heliconiaceae (<i>Heliconia</i>), Marantaceae (<i>Calathea</i>), Musaceae (<i>Musa</i>), Zingiberaceae (<i>Hedychium</i>) | PENZ et al (2000), WARREN et al (2013), SVELA (2015) |
| 101. <i>Caligo idomeneus</i> (Linnaeus, 1758) | Panama, Colombia, Suriname, Brazil, Peru, Bolivia | Marantaceae, Monimiaceae (<i>Palmeria</i>), Musaceae (<i>Musa</i>) | PENZ et al (2000), ROBINSON et al (2010), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|---|--|
| 102. <i>Caligo illioneus</i> (Cramer, 1775) | Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Suriname, Bolivia, Peru, Brazil, Paraguay, Trinidad, Saint Vincent | Cyperaceae (<i>Scleria</i>), Heliconiaceae (<i>Heliconia</i>), Musaceae (<i>Musa</i>), Poaceae (<i>Saccharum</i>), Zingiberaceae (<i>Hedychium</i>) | PENZ et al (2000), WARREN et al (2013), SAVELA (2015) |
| 103. <i>Caligo telamonius</i> (C. Felder & R. Felder, 1862) | Mexico, Guatemala, Belize, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Surinam | Cannaceae (<i>Canna</i>), Heliconiaceae (<i>Heliconia</i>), Marantaceae (<i>Calathea</i>), Musaceae (<i>Musa</i>), Rubiaceae (<i>Coffea</i>)?, Zingiberaceae (<i>Alpinia</i>) | PENZ et al (2000), WARREN et al (2013), SAVELA (2015) |
| 104. <i>Eryphanis automedon</i> (Cramer, 1775) | Guatemala, Nicaragua, Costa Rica, Colombia, Suriname, Ecuador, Bolivia, Brazil, Peru | Poaceae (<i>Bambusa</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |
| 105. <i>Opsiphanes tamarindi</i> C. & R. Felder, 1861 | Mexico, Honduras, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Bolivia | Araceae (<i>Arum</i>), Arecaceae (<i>Chamaedorea</i> , <i>Cocos</i>), Cannaceae (<i>Canna</i>), Heliconiaceae (<i>Heliconia</i>), Marantaceae (<i>Calathea</i>), Musaceae (<i>Musa</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |
| Elymniini | | | |
| 106. <i>Elymnias hypermnestra</i> (Linnaeus, 1763) | India, Sri Lanka, S China, Taiwan, Myanmar, Laos, S Vietnam, Thailand, Cambodia, W Malaysia, Philippines, Timor, Taiwan, Sumatra, Borneo, Java, Bali | Arecaceae (<i>Archontophoenix</i> , <i>Areca</i> , <i>Arenga</i> , <i>Calamus</i> , <i>Chrysalidocarpus</i> , <i>Cocos</i> , <i>Cyrtostachys</i> , <i>Elaeis</i> , <i>Licuala</i> , <i>Livistona</i> , <i>Metroxylon</i> , <i>Phoenix</i> , <i>Ptychosperma</i> , <i>Rhapis</i> , <i>Roystonea</i> , <i>Trachycarpus</i>), Fabaceae (<i>Butea</i>), Poaceae, Verbenaceae (<i>Lantana</i>) | ROBINSON et al (2010), HOSKINS (2015), SAVELA (2015) |
| Melanitini | | | |
| 107. <i>Melanitis leda</i> (Linnaeus, 1758) | Senegal, Gambia, Guinea-Bissau, Guinea, Mali, Burkina Faso, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Kenya, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Saudi Arabia, Yemen, Oman, Cape Verde Islands, Sao Tome and Principe, Equatorial Guinea, Mauritius, Rodrigues, Reunion, Seychelles, Mafia Island, Comoro Islands, Madagascar, Sri Lanka, India, Thailand, Laos, Cambodia, Vietnam, China, Malay Peninsula, Sumatra, Java, Borneo, Sulawesi, Bali, Lesser Sunda Islands, Philippines, New Guinea, N Australia | Arecaceae (<i>Cocos</i> , <i>Elaeis</i>), Cyperaceae (<i>Cladium</i>), Poaceae (<i>Andropogon</i> , <i>Apluda</i> , <i>Axonopus</i> , <i>Bambusa</i> , <i>Brachiaria</i> , <i>Capillipedium</i> , <i>Chrysopogon</i> , <i>Coix</i> , <i>Cynodon</i> , <i>Cyrtococcum</i> , <i>Digitaria</i> , <i>Eleusine</i> , <i>Ehrharta</i> , <i>Heteropogon</i> , <i>Imperata</i> , <i>Leersia</i> , <i>Melinis</i> , <i>Microstegium</i> , <i>Miscanthus</i> , <i>Ophiuros</i> , <i>Oplismenus</i> , <i>Oryza</i> , <i>Panicum</i> , <i>Paspalum</i> , <i>Pennisetum</i> , <i>Poa</i> , <i>Prospyrtochloa</i> , <i>Pseudechinolaena</i> , <i>Rottboellia</i> , <i>Saccharum</i> , <i>Setaria</i> , <i>Sorghum</i> , <i>Sporobolus</i> , <i>Stenotaphrum</i> , <i>Themeda</i> , <i>Thysanolaena</i> , <i>Zea</i> , <i>Zizania</i>) | WILLIAMS (2008), ROBINSON et al (2010), INAYOSHI (2015), HOSKINS (2015), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|---|--|
| Morphini | | | |
| 108. <i>Morpho achilles</i> (Linnaeus, 1758) | Colombia, Venezuela, Guyana, Suriname, French Guiana, Ecuador, Peru, Bolivia, Brazil, Paraguay, Uruguay | Fabaceae (<i>Dalbergia</i> , <i>Inga</i> , <i>Machaerium</i> , <i>Myrocarpus</i> , <i>Platymiscium</i> , <i>Pterocarpus</i>) | ROBINSON et al (2010), HOSKINS (2015), SAVELA (2015) |
| 109. <i>Morpho helenor</i> (Cramer, 1776) | Mexico, Honduras, Guatemala, Belize, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Guyana, Suriname, French Guiana, Venezuela, Ecuador, Peru, Brazil, Bolivia, Argentina, Paraguay, Trinidad, Tobago | Bignoniaceae (<i>Paragonia</i>), Fabaceae (<i>Arachis</i> , <i>Dalbergia</i> , <i>Dioclea</i> , <i>Inga</i> , <i>Lonchocarpus</i> , <i>Machaerium</i> , <i>Medicago</i> , <i>Mucuna</i> , <i>Pithecellobium</i> , <i>Platymiscium</i> , <i>Pterocarpus</i> , <i>Swartzia</i>) | ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |
| 110. <i>Morpho polyphemus</i> Westwood, 1850 | Mexico, Honduras, Guatemala, El Salvador, Nicaragua, Costa Rica | Fabaceae (<i>Inga</i> , <i>Pithecellobium</i>), Sapindaceae (<i>Paullinia</i>) | WARREN et al (2013), SAVELA (2015) |
| Satyrini | | | |
| 111. <i>Mycalesis intermedia</i> Moore, 1892 | Myanmar, Thailand, Laos, Cambodia, Vietnam, Peninsular Malaysia, S China, India | Poaceae | ROBINSON et al (2010), INAYOSHI (2015), SAVELA (2015) |
| Papilionidae | | | |
| Papilioninae | | | |
| Leptocircini | | | |
| 112. <i>Graphium agamemnon</i> (Linnaeus, 1758) | China, India, Sri Lanka, China, Malaysia, Myanmar, Thailand, Laos, Cambodia, Vietnam, Sumatra, Java, Borneo, Sulawesi, Bali, Philippines, Moluccas, New Guinea, Solomon Islands, Australia | Annonaceae (<i>Anaxagorea</i> , <i>Ancana</i> , <i>Annona</i> , <i>Artabotrys</i> , <i>Cyathostemma</i> , <i>Desmos</i> , <i>Fitzalania</i> , <i>Friesodielsia</i> , <i>Goniothalamus</i> , <i>Gutteria</i> , <i>Haplostichanthus</i> , <i>Melodorum</i> , <i>Miliusa</i> , <i>Mitrephora</i> , <i>Oncodostigma</i> , <i>Polyalthia</i> , <i>Pseuduvaria</i> , <i>Rollinia</i> , <i>Uvaria</i> , <i>Xylophia</i>), Bombacaceae (<i>Durio</i>), Dioscoreaceae (<i>Dioscorea</i>), Fabaceae (<i>Cassia</i>), Lauraceae (<i>Cinnamomum</i>), Magnoliaceae (<i>Magnolia</i> , <i>Michelia</i>), Piperaceae (<i>Piper</i>), Rutaceae (<i>Citrus</i>) | DUNN & DUNN (1991), VANE-WRIGHT & DE JONG (2003), ROBINSON et al (2010) HOSKINS (2015), INAYOSHI (2015), SAVELA (2015) |
| 113. <i>Graphium angolanus</i> (Goeze, 1779) | Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Ivory Coast, Mali, Burkina Faso, Ghana, Togo, Benin, Niger, Nigeria, Cameroon, Equatorial Guinea, Sao Tome and Principe, | Annonaceae (<i>Annona</i> , <i>Artabotrys</i> , <i>Monodora</i> , <i>Uvaria</i>), Apocynaceae (<i>Landolphia</i>), Malpighiaceae (<i>Sphedamnocarpus</i>) | WILLIAMS (2008), ROBINSON et al (2010) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|--|--|
| | Gabon, Congo, Democratic Republic of Congo, Central African Republic, Chad, Sudan, Uganda, Rwanda, Burundi, Ethiopia, Kenya, Tanzania, Angola, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Comoro Islands | | |
| 114. <i>Graphium antheus</i> (Cramer, 1779) | Senegal, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Angola, Central African Republic, Democratic Republic of Congo, Sudan, Uganda, Rwanda, Burundi, Ethiopia, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland | Annonaceae (<i>Annona</i> , <i>Artabotrys</i> , <i>Cleistochlamys</i> , <i>Hexalobus</i> , <i>Monanthataxis</i> , <i>Monodora</i> , <i>Uvaria</i>), Apocynaceae (<i>Landolphia</i>) | WILLIAMS (2008) |
| 115. <i>Graphium colonna</i> (Ward, 1873) | Liberia, Sierra Leone, Ghana, Ivory Coast, Togo, Equatorial Guinea, Gabon, Congo, Democratic Republic of Congo, Central African Republic, Sudan, Ethiopia, Somalia, Uganda, Kenya, Tanzania, Malawi, Mozambique, Zimbabwe, South Africa, Swaziland, Madagascar | Annonaceae (<i>Annona</i> , <i>Artabotrys</i> , <i>Monodora</i> , <i>Uvaria</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 116. <i>Graphium doson</i> C&R Felder, 1864 | India, Sri Lanka, Myanmar, Laos, Cambodia, Thailand, China, Taiwan, Korea, Vietman, Japan, Philippines, W Malaysia, Sumatra, Borneo, Sulawesi, Java | Annonaceae (<i>Annona</i> , <i>Desmos</i> , <i>Miliusa</i> , <i>Polyalthia</i> , <i>Uvaria</i>), Apocynaceae (<i>Hunteria</i>), Callophylaceae (<i>Mesua</i>), Lauraceae (<i>Cinnamomum</i> , <i>Litsea</i>), Magnoliaceae (<i>Magnolia</i> , <i>Michelia</i>) | ROBINSON et al (2010), HOSKINS (2015), SVELA (2015) |
| 117. <i>Graphium polistratus</i> (Grose-Smith, 1889) | Nigeria, Democratic Republic of Congo, Kenya, Tanzania, Malawi, Mozambique | Annonaceae (<i>Annona</i> , <i>Artabotrys</i> , <i>Uvaria</i>) | WILLIAMS (2008), ROBINSON et al (2010), |
| 118. <i>Mimoides ilus</i> (Fabricius, 1793) | Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela | Annonaceae (<i>Annona</i> , <i>Rollinia</i>) | WARREN et al (2013), SVELA (2015) |
| 119. <i>Mimoides thymbraeus</i> (Boisduval, 1836) | Mexico, Honduras, El Salvador, Guatemala | Annonaceae (<i>Annona</i>) | WARREN et al (2013), MURILLO-HILLER (2013), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|---|--|
| Papilionini | | | |
| 120. <i>Papilio anchisiades</i> Esper, 1788 | USA (Texas), Mexico, Honduras, Guatemala, El Salvador, Belize, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guayana, Suriname, French Guiana, Ecuador, Peru, Bolivia, Brazil, Argentina, Paraguay, Trinidad, Tobago | Rutaceae (<i>Amyris</i> , <i>Casimiroa</i> , <i>Choisya</i> , <i>Citrus</i> , <i>Esenbeckia</i> , <i>Fortunella</i> , <i>Ruta</i> , <i>Skimmia</i> , <i>Swinglea</i> , <i>Zanthoxylum</i>) | LEWIS (2010), ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 121. <i>Papilio androgeus</i> Cramer, 1775 | USA (Florida), Mexico, Guatemala, El Salvador, Belize, Costa Rica, Panama, Suriname, Colombia, Ecuador, Bolivia, Peru, Brazil, Argentina, Paraguay, Hispaniola, Cuba, Puerto Rico, Santa Lucia, Trinidad, Tobago | Rutaceae (<i>Amyris</i> , <i>Casimiroa</i> , <i>Choisya</i> , <i>Citrus</i> , <i>Esenbeckia</i> , <i>Swinglea</i> , <i>Zanthoxylum</i>) | LEWIS (2010), ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 122. <i>Papilio astyalus</i> Godart, 1819 | USA (Texas, Arizona), Mexico, Guatemala, El Salvador, Costa Rica, Panama, Colombia, Venezuela, French Guiana, Ecuador, Peru, Bolivia, Brazil, Argentina, Paraguay, Cuba, Trinidad | Rutaceae (<i>Amyris</i> , <i>Balfourodendron</i> , <i>Casimiroa</i> , <i>Choisya</i> , <i>Citrus</i> , <i>Esenbeckia</i> , <i>Galipea</i> , <i>Pilocarpus</i> , <i>Ruta</i> , <i>Skimmia</i> , <i>Zanthoxylum</i>) | LEWIS (2010), ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 123. <i>Papilio clytia</i> Linnaeus, 1758 | India, Sri Lanka, Andaman Islands, China, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, Sumatra, Borneo, Sulawesi, Philippines, Timor | Lauraceae (<i>Alseodaphne</i> , <i>Cinnamomum</i> , <i>Cryptocarya</i> , <i>Litsea</i> , <i>Persea</i> , <i>Phoebe</i>), Sapotaceae (<i>Sarcosperma</i>) | ROBINSON et al (2010), HOSKINS (2015), SVELA (2015) |
| 124. <i>Papilio constantinus</i> Ward, 1871 | Congo, Democratic Republic of Congo, Ethiopia, Somalia, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, South Africa, Swaziland | Rutaceae (<i>Calodendrum</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Teclea</i> , <i>Toddalia</i> , <i>Vepris</i> , <i>Zanthoxylum</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 125. <i>Papilio crespontes</i> Cramer, 1777 | Canada, USA, Mexico, Honduras, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Colombia; introduced to Cuba | Cannabaceae (<i>Humulus</i>), Cornaceae (<i>Nyssa</i>), Lauraceae (<i>Persea</i>), Piperaceae (<i>Piper</i>), Rutaceae (<i>Amyris</i> , <i>Casimiroa</i> , <i>Choisya</i> , <i>Citrus</i> , <i>Dictamnus</i> , <i>Esenbeckia</i> , <i>Helietta</i> , <i>Murraya</i> , <i>Phellodendron</i> , <i>Ptelea</i> , <i>Ruta</i> , <i>Zanthoxylum</i>), Salicaceae (<i>Populus</i>), Staphyleaceae (<i>Staphylea</i>) | LEWIS (2010), ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 126. <i>Papilio dardanus</i> Brown, 1776 | Senegal, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Burkina Faso, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, | Monimiaceae (<i>Xymalos</i>), Rutaceae (<i>Calodendrum</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Orcia</i> , <i>Teclea</i> , <i>Toddalia</i> , <i>Vepris</i> , <i>Zanthoxylum</i>) | WILLIAMS (2008), ROBINSON et al (2010) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|---|---|
| | Sao Tome and Principe, Gabon, Congo, Angola, Central African Republic, Democratic Republic of Congo, Sudan, Uganda, Kenya, Ethiopia, Eritrea, Somalia, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, South Africa, Swaziland, Comoro Islands, Madagascar | | |
| 127. <i>Papilio deiphobus</i> Linnaeus, 1758 | Sumatra, Sulawesi, New Guinea, Philippines, Moluccas | Rutaceae (<i>Atalantia</i> , <i>Citrus</i>) | ROBINSON et al (2010), SVELA (2015) |
| 128. <i>Papilio demodocus</i> Esper, 1798 | Mauritania, Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Mali, Burkina Faso, Ghana, Togo, Benin, Niger, Nigeria, Cameroon, Uganda, Kenya, Tanzania, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Lesotho, Saudi Arabia, Yemen, Cape Verde Islands, Comoro Islands, Madagascar, Mauritius, Reunion, Socotra | Anacardiaceae (<i>Pseudospondias</i>), Apiaceae (<i>Angelica</i> , <i>Athamanta</i> , <i>Deverra</i> , <i>Foeniculum</i> , <i>Notobubon</i> , <i>Peucedanum</i> , <i>Pituranthos</i>), Euphorbiaceae (<i>Euphorbia</i>), Fabaceae (<i>Acacia</i> , <i>Psoralea</i>), Rhamnaceae (<i>Ziziphus</i>), Rutaceae (<i>Aegle</i> , <i>Calodendrum</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Fagaropsis</i> , <i>Glycosmis</i> , <i>Haplophyllum</i> , <i>Murraya</i> , <i>Oricia</i> , <i>Phellodendron</i> , <i>Poncirus</i> , <i>Ptelea</i> , <i>Ruta</i> , <i>Skimmia</i> , <i>Teclea</i> , <i>Toddalia</i> , <i>Vepris</i> , <i>Zanthoxylum</i>), Ptaeroxylaceae (<i>Ptaeroxylon</i>), Sapindaceae (<i>Hippobromus</i>) | WILLIAMS (2008), ROBINSON et al (2010), SVELA (2015) |
| 129. <i>Papilio demoleus</i> Linnaeus, 1758 | Saudi Arabia, Iran, India, Sri Lanka, Afghanistan, Nepal, Myanmar, Thailand, Laos, Cambodia, Vietnam, S. China, Taiwan, Japan, Philippines, Malaysia, Sumatra, Java, Borneo, Lesser Sunda Islands, Timor, New Guinea, Australia, introduced to Central America (Dominican Republic) and the Caribbean (Puerto Rico, Jamaica) | Fabaceae (<i>Cullen</i> , <i>Psoralea</i>), Magnoliaceae (<i>Michelia</i>), Loganiaceae (<i>Fagraea</i>), Rhamnaceae (<i>Ziziphus</i>), Rutaceae (<i>Acronychia</i> , <i>Aegle</i> , <i>Atalantia</i> , <i>Chloroxylon</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Flindersia</i> , <i>Fortunella</i> , <i>Glycosmis</i> , <i>Limonia</i> , <i>Microcitrus</i> , <i>Micromelum</i> , <i>Murraya</i> , <i>Ruta</i> , <i>Toddalia</i> , <i>Triphasia</i> , <i>Zanthoxylum</i>), Tiliaceae (<i>Tilia</i>) | VANE-WRIGHT & DE JONG (2003), LEWIS (2009), ROBINSON et al (2010), HOSKINS (2015), SVELA (2015) |
| 130. <i>Papilio echerioides</i> Trimen, 1868 | Cameroon, Equatorial Guinea, Angola, Democratic Republic of Congo, Sudan, Ethiopia, Uganda, Rwanda, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, South Africa, Swaziland | Rutaceae (<i>Calodendrum</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Clausena</i> , <i>Teclea</i> , <i>Toddalia</i> , <i>Vepris</i> , <i>Zanthoxylum</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 131. <i>Papilio erostratus</i> Westwood, 1847 | Mexico, Guatemala, Belize, Honduras, El Salvador, Nicaragua, Costa Rica | Rutaceae (<i>Casimiroa</i> , <i>Citrus</i>) | MAES (2006), LEWIS (2010), WARREN et al (2013), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|---|---|
| 132. <i>Papilio garamas</i> (Geyer, 1829) | Mexico, Guatemala, Honduras, El Salvador, Costa Rica, Panama | Lauraceae (<i>Persea</i> , <i>Sassafras</i>), Magnoliaceae (<i>Liriodendron</i> , <i>Magnolia</i>) | SCRIBER et al (1990), WARREN et al (2013), SVELA (2015) |
| 133. <i>Papilio helenus</i> Linnaeus, 1758 | India, Sri Lanka, Bhutan, Myanmar, Thailand, Cambodia, Laos, Vietnam, China, Taiwan, Japan, Philippines, Malaysia, Sumatra, Borneo, Sulawesi, Java | Rutaceae (<i>Citrus</i> , <i>Euodia</i> , <i>Fortunella</i> , <i>Phellodendron</i> , <i>Poncirus</i> , <i>Toddalia</i> , <i>Zanthoxylum</i>) | ROBINSON et al (2010), HOSKINS (2015), SVELA (2015) |
| 134. <i>Papilio hipponous</i> C & R. Felder, 1862 | Philippines, Sulawesi | Rutaceae (<i>Citrus</i>) | PAGE et al (2003), VANE-WRIGHT & DE JONG (2003), SVELA (2015) |
| 135. <i>Papilio lowi</i> Druce, 1873 | Philippines, Borneo | Rutaceae (<i>Citrus</i>) | REIMAN GARDENS (2015), SVELA (2015) |
| 136. <i>Papilio maackii</i> Ménétries, 1859 | SE Russia, Sakhalin, Kurile Islands, E China, Japan (Hokkaido), North Korea | Rutaceae (<i>Euodia</i> , <i>Orixa</i> , <i>Phellodendron</i> , <i>Zanthoxylum</i>) | ROBINSON et al (2010), SVELA (2015) |
| 137. <i>Papilio memnon</i> Linnaeus, 1758 | India, Nepal, Myanmar, Thailand, Laos, Cambodia, Vietnam, Peninsular Malaysia, China, Taiwan, Japan, Borneo, Sumatra, Java, Bali, Philippines | Aristolochiaceae (<i>Aristolochia</i>), Magnoliaceae (<i>Magnolia</i> , <i>Michelia</i>), Rutaceae (<i>Atalantia</i> , <i>Citrus</i> , <i>Fortunella</i> , <i>Paramignya</i> , <i>Poncirus</i> , <i>Severinia</i> , <i>Toddalia</i> , <i>Zanthoxylum</i>) | ROBINSON et al (2010), HOSKINS (2015), INAYOSHI (2015), (SVELA (2015) |
| 138. <i>Papilio nephelus</i> Boisduval, 1836 | India, Nepal, Bhutan, Myanmar, Thailand, Laos, Cambodia, Vietnam, China (Yunnan), Taiwan, Malaysia, Sumatra, Borneo, Sulawesi, Java | Rutaceae (<i>Citrus</i> , <i>Clausena</i> , <i>Euodia</i> , <i>Toddalia</i> , <i>Zanthoxylum</i>) | ROBINSON et al (2010), HOSKINS (2015), SVELA (2015) |
| 139. <i>Papilio nireus</i> Linnaeus, 1758 | Senegal, Gambia, Guinea-Bissau, Guinea, Burkina Faso, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Central African Republic, Angola, Democratic Republic of Congo, Sudan, Uganda, Ethiopia, Eritrea, Somalia, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Comoro Islands | Rutaceae (<i>Calodendrum</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Orixa</i> , <i>Teclea</i> , <i>Toddalia</i> , <i>Vepris</i> , <i>Zanthoxylum</i>) | WILLIAMS (2008), ROBINSON et al (2010), SVELA (2015) |
| 140. <i>Papilio ophidicephalus</i> Oberthür, 1878 | Kenya, Tanzania, Zambia, Democratic Republic of Congo, Malawi, Mozambique, Zimbabwe, South Africa, Swaziland | Rutaceae (<i>Calodendrum</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Teclea</i> , <i>Toddalia</i> , <i>Zanthoxylum</i>) | WILLIAMS (2008), ROBINSON et al (2010) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|---|--|--|
| 141. <i>Papilio palinurus</i> Fabricius, 1787 | Thailand, Myanmar, Peninsular Malaysia, Indonesia (Sumatra, Borneo), Philippines | Rutaceae (<i>Clausena</i> , <i>Euodia</i> , <i>Micromelum</i>) | ROBINSON et al (2010), SVELA (2015) |
| 142. <i>Papilio peranthus</i> Fabricius, 1787 | Java, Sulawesi, Lesser Sunda Islands | Rutaceae (<i>Micromelum</i>) | ROBINSON et al (2010), SVELA (2015) |
| 143. <i>Papilio phorcas</i> Cramer, 1775 | Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Bioko, Gabon, Angola, Congo, Democratic Republic of Congo, Central African Republic, Sudan, Uganda, Kenya, Tanzania, Malawi, Zambia | Rutaceae (<i>Calodendrum</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Macrostylis</i> , <i>Oriciopsis</i> , <i>Teclea</i> , <i>Toddalia</i> , <i>Vepris</i> , <i>Zanthoxylum</i>) | WILLIAMS (2008), ROBINSON et al (2010) |
| 144. <i>Papilio pilumnus</i> Boisduval, 1836 | USA (Texas), Mexico, Guatemala, | Lauraceae (<i>Litsea</i>) | ROBINSON et al (2010), SVELA (2015) |
| 145. <i>Papilio polytes</i> Linnaeus, 1758 | India, Sri Lanka, Himalayas, China, Taiwan, Japan, Myanmar, Thailand, Cambodia, Laos, Vietnam, W Malaysia, Singapore, Andaman and Nicobar Islands, Sumatra, Borneo, Java, Sulawesi, Bali, Timor, Philippines | Rutaceae (<i>Aegle</i> , <i>Atalantia</i> , <i>Citrus</i> , <i>Clausena</i> , <i>Correa</i> , <i>Euodia</i> , <i>Fortunella</i> , <i>Glycosmis</i> , <i>Micromelum</i> , <i>Murraya</i> , <i>Paramignya</i> , <i>Poncirus</i> , <i>Severinia</i> , <i>Toddalia</i> , <i>Triphasia</i> , <i>Zanthoxylum</i>) | ROBINSON et al (2010), INAYOSHI (2015), SVELA (2015) |
| 146. <i>Papilio polyxenes</i> Fabricius, 1775 | Canada, USA, Mexico, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Peru, Ecuador, Cuba | Apiaceae (<i>Aegopodium</i> , <i>Anethum</i> , <i>Angelica</i> , <i>Apium</i> , <i>Berula</i> , <i>Carum</i> , <i>Ciclospermum</i> , <i>Cicuta</i> , <i>Conium</i> , <i>Cryptotaenia</i> , <i>Cymopterus</i> , <i>Daucus</i> , <i>Eryngium</i> , <i>Foeniculum</i> , <i>Harbouria</i> , <i>Heracleum</i> , <i>Levisticum</i> , <i>Ligusticum</i> , <i>Lomatium</i> , <i>Musineon</i> , <i>Osmorhiza</i> , <i>Oxypolis</i> , <i>Pastinaca</i> , <i>Petroselinum</i> , <i>Ptilimnium</i> , <i>Sanicula</i> , <i>Sium</i> , <i>Spananthe</i> , <i>Spermolepis</i> , <i>Taenidia</i> , <i>Tauschia</i> , <i>Thaspium</i> , <i>Torilis</i> , <i>Zizia</i>), Asteraceae (<i>Cosmos</i> , <i>Solidago</i>), Brassicaceae (<i>Brassica</i>), Magnoliaceae (<i>Magnolia</i>), Rutaceae (<i>Dictamnus</i> , <i>Ruta</i> , <i>Thamnosma</i> , <i>Zanthoxylum</i>) | ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| 147. <i>Papilio thoas</i> Linnaeus, 1771 | USA (Texas), Mexico, Honduras, Guatemala, El Salvador, Belize, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, French Guiana, Suriname, Brazil, Ecuador, Peru, Bolivia, Argentina, Paraguay, Uruguay, Cuba, Trinidad, Tobago | Araceae (<i>Syngonium</i>), Rutaceae (<i>Citrus</i> , <i>Ertela?</i> , <i>Esenbeckia</i> , <i>Fortunella</i> , <i>Monnieria</i> , <i>Ptelea</i> , <i>Ruta</i> , <i>Zanthoxylum</i>), Piperaceae (<i>Piper</i>) | LEWIS (2010), ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|---|--|--|
| 148. <i>Papilio torquatus</i> Cramer, 1777 | Mexico, El Salvador, Guatemala, Costa Rica, Panama, Colombia, Venezuela, Suriname, French Guiana, Brazil, Ecuador, Peru, Bolivia, Argentina, Paraguay, Trinidad | Rutaceae (<i>Angostura</i> , <i>Choisya</i> , <i>Citrus</i> , <i>Ertela</i> , <i>Erythrochiton</i> , <i>Esenbeckia</i> , <i>Euxylophora</i> , <i>Galipea</i> , <i>Zanthoxylum</i>) | LEWIS (2010), ROBINSON et al (2010), WARREN et al (2013), SVELA (2015) |
| Troidini | | | |
| 149. <i>Battus belus</i> (Cramer, 1777) | Mexico, Guatemala, Venezuela, Colombia, Peru, Bolivia, Brazil, Guyana, Surinam | Aristolochiaceae (<i>Aristolochia</i>) | ROBINSON et al (2010), SVELA (2015) |
| 150. <i>Battus polydamas</i> Linnaeus, 1758 | SE USA, Mexico, Honduras, Costa Rica, Panama, Colombia, Venezuela, Guayna, Suriname, Ecuador, Bolivia, Chile, Argentina, Peru, Brazil, Caribbean islands (Cuba, Hispaniola, Jamaica, Puerto Rico, Virgin Islands, St. Kitts, Montserrat, Guadeloupe, Trinidad, Tobago, Dominica, Martinique, St. Lucia, St. Vincent, Grenada, Bahamas and others) | Aristolochiaceae (<i>Aristolochia</i>), Rutaceae (<i>Citrus</i>) | ROTHSCHILD & JORDAN (1906), ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SVELA (2015) |
| 115 151. <i>Atrophaneura antiphus</i> (Fabricius, 1793) | Sumatra, Borneo, Java, Philippines | Aristolochiaceae (<i>Aristolochia</i>) | ROTHSCHILD (1895), PAGE et al (2003), SVELA (2015) |
| 152. <i>Atrophaneura kotzebuea</i> (Eschscholtz, 1821) | Philippines | Aristolochiaceae (<i>Aristolochia</i>) | PAGE et al (2003), SVELA (2015) |
| 153. <i>Parides childrenae</i> Gray, 1832 | Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Ecuador | Aristolochiaceae (<i>Aristolochia</i>) | WARREN et al (2013), SVELA (2015) |
| 154. <i>Parides eurimedes</i> (Stoll, 1782) | Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador | Aristolochiaceae (<i>Aristolochia</i>) | ROBINSON et al (2010), SVELA (2015) |
| 155. <i>Parides iphidamas</i> (Fabricius, 1793) | Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Peru, Ecuador | Aristolochiaceae (<i>Aristolochia</i>) | MÖHN (2006), SVELA (2015) |
| 156. <i>Parides lysander</i> (Cramer, 1775) | Suriname, French Guiana, Venezuela, Colombia, Ecuador, Peru, Brazil | Aristolochiaceae (<i>Aristolochia</i>), Rutaceae (<i>Citrus</i>) | ROBINSON et al (2010), SVELA (2015) |
| 157. <i>Parides montezuma</i> (Westwood, 1842) | Mexico, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama | Aristolochiaceae (<i>Aristolochia</i>) | MÖHN (2006), WARREN et al (2013), SVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|--|--|
| 158. <i>Parides photinus</i> (Doubleday, 1844) | Mexico, Honduras, Belize, Nicaragua, Costa Rica | Aristolochiaceae (<i>Aristolochia</i>) | MÖHN (2006), SAVELA (2015) |
| 159. <i>Troides rhadamantus</i> (Lucas, 1835) | Philippines | Aristolochiaceae (<i>Aristolochia</i>) | ROBINSON et al (2010), SAVELA (2015) |
| Pieridae | | | |
| Coliadinae | | | |
| 160. <i>Anteos clorinde</i> (Godart, 1824) | USA (Texas, Florida), Mexico, Honduras, Belize, Venezuela, Peru, Bolivia, Brazil, Argentina, Paraguay, Cuba, Hispaniola, Jamaica, Bahamas | Fabaceae (<i>Cassia</i> , <i>Pithecellobium</i> , <i>Senna</i>) | ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |
| 161. <i>Catopsilia pomona</i> Fabricius, 1775 | India, Sri Lanka, Taiwan, Bangladesh, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, Philippines, Sumatra, Java, Borneo, Sulawesi, Lesser Sunda Islands, Timor, Moluccas, Solomon Islands, New Guinea, New Caledonia, Vanuatu, Australia, New Zealand | Fabaceae (<i>Bauhinia</i> , <i>Brownea</i> , <i>Butea</i> , <i>Cassia</i> , <i>Pterocarpus</i> , <i>Senna</i> , <i>Sesbania</i>) | VANE-WRIGHT & DE JONG (2003), ROBINSON et al (2010), INAYOSHI (2015), SAVELA (2015) |
| 162. <i>Phoebis argante</i> (Fabricius, 1775) | Mexico, El Salvador, Honduras, Costa Rica, Panama, Guyana, Suriname, Peru, Brazil, Argentina, Uruguay, Trinidad, Puerto Rico, Cuba, Hispaniola, Jamaica, Hispaniola | Capparaceae, Fabaceae (<i>Caesalpinia</i> , <i>Cassia</i> , <i>Inga</i> , <i>Pentaclethra</i> , <i>Pithecellobium</i>) | ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |
| 163. <i>Phoebis philea</i> (Linnaeus, 1763) | S USA, Mexico, El Salvador, Costa Rica, Suriname, Peru, Brazil, Cuba, Hispaniola, Puerto Rico | Fabaceae (<i>Caesalpinia</i> , <i>Cassia</i> , <i>Pithecellobium</i> , <i>Senna</i>) | ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |
| 164. <i>Phoebis sennae</i> (Linnaeus, 1758) | USA, Mexico, Honduras, Costa Rica, Panama, Suriname, French Guiana, Peru, Chile, Bolivia, Brazil, Chile, Argentina, Uruguay, Galapagos, Cuba, Hispaniola, St. Vincent, Grenada, Jamaica | Brassicaceae, Flacourtiaceae (<i>Casearia</i>), Fabaceae (<i>Cassia</i> , <i>Chamaecrista</i> , <i>Crotalaria</i> , <i>Phaseolus</i> , <i>Senna</i> , <i>Trifolium</i>) | PYLE (1981), ROBINSON et al (2010), WARREN et al (2013), HOSKINS (2015), SAVELA (2015) |
| Pierinae | | | |
| Pierini | | | |
| 165. <i>Ascia monuste</i> (Linnaeus, 1764) | USA, Mexico, Nicaragua, Costa Rica, Suriname, Brazil, Argentina, Peru, Antilles (Cuba, Hispaniola, Jamaica, Puerto Rico, St. Vincent, | Amaryllidaceae (<i>Allium</i>), Bataceae (<i>Batis</i>), Brassicaceae (<i>Armoracia</i> , <i>Brassica</i> , <i>Cakile</i> , <i>Capsella</i> , <i>Lepidium</i> , <i>Lobularia</i> , <i>Raphanus</i> , <i>Rorippa</i> , <i>Sinapis</i>), | ROBINSON et al (2010), WARREN et al (2013), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|---|---|
| | Virgin Islands, St. Kitts, Antigua, St. Barthélemy, St. Martin), Bahamas | Capparaceae (<i>Capparis</i> , <i>Crateva</i>), Cleomaceae (<i>Cleome</i> , <i>Polanisia</i>), Fabaceae (<i>Cassia</i>), Tropaeolaceae (<i>Tropaeolum</i>) | |
| Colotini | | | |
| 166. <i>Hebomoia glaucippe</i> (Linnaeus, 1758) | India, Sri Lanka, Nepal, China, Taiwan, Myanmar, Thailand, Cambodia, Laos, Vietnam, Malaysia, Singapore, Japan, Borneo, Sumatra, Java, Sulawesi, Philippines, Solomon Islands, Andaman Islands | Brassicaceae (<i>Brassica</i>), Capparaceae (<i>Capparis</i> , <i>Cleome</i> , <i>Crateva</i>) | ROBINSON et al (2010), INAYOSHI (2015), SABELA (2015) |
| 167. <i>Pareronia valeria</i> (Cramer, 1776) | China (Hainan), India, Myanmar, Thailand, Peninsular Malaysia, Singapore, Sumatra, Java, Borneo, Philippines | Capparaceae (<i>Capparis</i>) | ROBINSON et al (2010), INAYOSHI (2015), SABELA (2015) |
| Saturniidae | | | |
| Saturniinae | | | |
| Attacini | | | |
| 168. <i>Attacus atlas</i> (Linnaeus, 1758) | India, Sri Lanka, China, Thailand, Malaysia, Singapore, Java, Sumatra, Borneo, Sulawesi, Philippines, Timor, New Guinea | Anacardiaceae (<i>Anacardium</i> , <i>Lannea</i> , <i>Mangifera</i>), Annonaceae (<i>Annona</i> , <i>Artabotrys</i> , <i>Cananga</i>), Apocynaceae (<i>Alstonia</i> , <i>Nerium</i> , <i>Sarcostemma</i>), Aquifoliaceae (<i>Ilex</i>), Araliaceae (<i>Schefflera</i>), Asteraceae (<i>Artemisia</i>), Avicenniaceae (<i>Avicennia</i>), Berberidaceae (<i>Berberis</i>), Betulaceae (<i>Betula</i>), Bignoniaceae (<i>Spathodea</i>), Bombacaceae (<i>Ceiba</i>), Burseraceae (<i>Canarium</i>), Caprifoliaceae (<i>Lonicera</i>), Combretaceae (<i>Quisqualis</i> , <i>Terminalia</i>), Convolvulaceae (<i>Ipomoea</i>), Corylaceae (<i>Carpinus</i>), Crypteroniaceae (<i>Crypteronia</i>), Dilleniaceae (<i>Dillenia</i>), Dipterocarpaceae (<i>Shorea</i>), Ericaceae (<i>Kalmia</i> , <i>Rhododendron</i>), Euphorbiaceae (<i>Aleurites</i> , <i>Bischofia</i> , <i>Glochidion</i> , <i>Hevea</i> , <i>Phyllanthus</i> , <i>Ricinus</i> , <i>Sapium</i> , <i>Stillingia</i>), Fabaceae (<i>Albizia</i> , <i>Codariocalyx</i> , <i>Erythrina</i> , <i>Parkia</i> , <i>Sesbania</i>), Fagaceae, Goodeniaceae (<i>Scaevola</i>), Lamiaceae (<i>Leucosceptrum</i>), Lauraceae (<i>Cinnamomum</i> , <i>Persea</i> , <i>Sassafras</i>), Loganiaceae | ROBINSON et al (2010), HOSKINS (2015), SABELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|---|--|---|
| | | (<i>Fagraea</i>), Lythraceae (<i>Lagerstroemia</i>), Magnoliaceae (<i>Michelia</i>), Malvaceae (<i>Hibiscus</i>), Melastomataceae (<i>Clidemia</i> , <i>Melastoma</i> , <i>Memecylon</i>), Meliaceae (<i>Sandoricum</i> , <i>Swietenia</i>), Moraceae (<i>Ficus</i> , <i>Morus</i>), Musaceae (<i>Musa</i>), Myrsinaceae (<i>Ardisia</i> , <i>Embelia</i> , <i>Maesa</i>), Myrtaceae (<i>Eucalyptus</i> , <i>Eugenia</i> , <i>Psidium</i>), Oleaceae (<i>Fraxinus</i> , <i>Jasminum</i> , <i>Ligustrum</i> , <i>Syringa</i>), Oxalidaceae (<i>Averrhoa</i>), Piperaceae (<i>Piper</i>), Poaceae (<i>Setaria</i>), Rhizophoraceae (<i>Bruguiera</i>), Rosaceae (<i>Malus</i> , <i>Prunus</i> , <i>Pyrus</i> , <i>Rosa</i>), Rubiaceae (<i>Cinchona</i> , <i>Coffea</i> , <i>Mussaenda</i> , <i>Nauclea</i> , <i>Uncaria</i> , <i>Vangueria</i>), Rutaceae (<i>Citrus</i>), Salicaceae (<i>Populus</i> , <i>Salix</i>), Sapindaceae (<i>Dimocarpus</i> , <i>Litchi</i> , <i>Nephelium</i> , <i>Schleichera</i>), Scrophulariaceae (<i>Paulownia</i>), Simaroubaceae (<i>Ailanthus</i> , <i>Brucea</i>), Sterculiaceae (<i>Theobroma</i>), Symplocaceae (<i>Symplocos</i>), Theaceae (<i>Camellia</i>), Tiliaceae (<i>Muntingia</i>), Verbenaceae (<i>Clerodendrum</i> , <i>Gmelina</i> , <i>Lantana</i> , <i>Stachytarpheta</i> , <i>Vitex</i>), Zingiberaceae (<i>Curcuma</i> , <i>Etlingera</i>) | |
| 169. <i>Attacus caesar</i> Maassen, 1873 | Philippines | Annonaceae (<i>Annona</i> , <i>Cananga</i>), Fabaceae (<i>Erythrina</i>), Lauraceae (<i>Persea</i>), Meliaceae (<i>Sandoricum</i> , <i>Swietenia</i>), Moraceae (<i>Artocarpus</i>), Myricaceae (<i>Myrica</i>), Oleaceae (<i>Syringa</i>), Rutaceae (<i>Citrus</i>), Salicaceae (<i>Salix</i>) | PAUKSTADT & PAUKSTADT (2002), ROBINSON et al (2010) |
| 170. <i>Epiphora mythimnia</i> (Westwood, 1849) | Botswana, Kenya, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe | Bignoniaceae (<i>Fernandoa</i>), Euphorbiaceae (<i>Croton</i>), Rhamnaceae (<i>Frangula</i> , <i>Helinus</i> , <i>Ziziphus</i>) | ROBINSON et al (2010), DE PRINS & DE PRINS (2015) |
| 171. <i>Rothschildia lebeau</i> (Guérin-Méneville, 1868) | USA (Texas), Mexico, Costa Rica, Panama, Venezuela, Ecuador, Peru | Anacardiaceae (<i>Malosma</i> , <i>Schinus</i> , <i>Spondias</i>), Euphorbiaceae (<i>Ricinus</i>), Flacourtiaceae (<i>Casearia</i> , <i>Zuelania</i>), Fabaceae (<i>Acacia</i>), Lythraceae (<i>Lythrum</i>), Oleaceae (<i>Fraxinus</i> , <i>Ligustrum</i> , <i>Syringa</i>), Rosaceae (<i>Prunus</i>), Rubiaceae (<i>Cephalanthus</i> , <i>Chiococca</i> , <i>Exostema</i>), Rutaceae (<i>Citrus</i> , <i>Zanthoxylum</i>), Salicaceae (<i>Salix</i>), Simaroubaceae (<i>Ailanthus</i>) | ROBINSON et al (2010), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|---|--|---|--|
| 172. <i>Samia cynthia</i> (Drury, 1773) | China, Korea; introduced to Japan, India, Australia, Canada, USA, Venezuela, Uruguay, Brazil, Tunisia, France, Austria, Switzerland, Germany, Spain, Bulgaria, Italy | Aceraceae (<i>Acer</i>), Adoxaceae (<i>Sambucus</i>), Apiaceae (<i>Apium</i>), Asteraceae (<i>Ageratina</i>), Anacardiaceae (<i>Rhus</i>), Apocynaceae (<i>Plumeria</i>), Aquifoliaceae (<i>Ilex</i>), Araliaceae (<i>Heteropanax</i>), Berberidaceae (<i>Berberis</i>), Burseraceae (<i>Canarium</i>), Caprifoliaceae (<i>Viburnum</i>), Caricaceae (<i>Carica</i>), Celastraceae (<i>Celastrus</i> , <i>Euonymus</i>), Coriariaceae (<i>Coriaria</i>), Cornaceae (<i>Camptotheca</i> , <i>Cornus</i>), Corylaceae (<i>Carpinus</i>), Euphorbiaceae (<i>Glochidion</i> , <i>Jatropha</i> , <i>Manihot</i> , <i>Ricinus</i>), Fabaceae (<i>Cassia</i> , <i>Laburnum</i>), Fagaceae (<i>Quercus</i>), Hamamelidaceae (<i>Liquidambar</i>), Juglandaceae (<i>Juglans</i>), Lauraceae (<i>Laurus</i> , <i>Lindera</i> , <i>Sassafras</i>), Lythraceae (<i>Lagerstroemia</i> , <i>Lawsonia</i>), Magnoliaceae (<i>Liriodendron</i> , <i>Magnolia</i> , <i>Michelia</i>), Malvaceae (<i>Alcea</i>), Meliaceae (<i>Azadirachta</i>), Myrtaceae (<i>Psidium</i>), Oleaceae (<i>Forsythia</i> , <i>Fraxinus</i> , <i>Ligustrum</i> , <i>Syringa</i>), Platanaceae (<i>Platanus</i>), Primulaceae (<i>Anagallis</i>), Rhamnaceae (<i>Ziziphus</i>), Rosaceae (<i>Malus</i> , <i>Prunus</i> , <i>Pyrus</i> , <i>Sorbus</i> , <i>Spiraea</i>), Rubiaceae (<i>Coffea</i>), Rutaceae (<i>Euodia</i> , <i>Ptelea</i> , <i>Zanthoxylum</i>), Salicaceae (<i>Salix</i>), Simaroubaceae (<i>Ailanthus</i>), Solanaceae (<i>Solanum</i>), Sterculiaceae (<i>Firmiana</i>), Tiliaceae (<i>Tilia</i>), Verbenaceae (<i>Gmelina</i>) | PEIGLER & NAUMANN (2003), ROBINSON et al (2010), SAVELA (2015) |
| 173. <i>Samia ricini</i> (Donovan, 1798) | India, Indonesia | Euphorbiaceae (<i>Ricinus</i>), Lauraceae (<i>Cinnamomum</i>), Rubiaceae (<i>Cinchona</i>) | ROBINSON et al (2010) |
| Bunaeini | | | |
| 174. <i>Bunaea alcinoe</i> (Stoll, 1780) | Angola, Benin, Cameroon, Chad, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Gabon, Kenya, Lesotho, Madagascar, Malawi, Mozambique, South Africa, Sudan, São Tomé & Príncipe, Tanzania, Uganda, Zimbabwe | Anacardiaceae (<i>Harpephyllum</i> , <i>Mangifera</i> , <i>Rhus</i> , <i>Schinus</i>), Annonaceae (<i>Cananga</i>), Apocynaceae (<i>Diplorhynchus</i>), Araliaceae (<i>Cussonia</i> , <i>Panax</i>), Arecaceae (<i>Elaeis</i>), Balanitaceae (<i>Balanites</i>), Burseraceae (<i>Dacryodes</i>), Caprifoliaceae (<i>Lonicera</i>), Celastraceae (<i>Maytenus</i>), Combretaceae (<i>Terminalia</i>), Ebenaceae (<i>Diospyros</i>), Euphorbiaceae | ROBINSON et al (2010), DE PRINS & DE PRINS (2015), LATHAM (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|--|---|--|
| | | (<i>Croton</i> , <i>Manihot</i> , <i>Sapium</i>), Fabaceae (<i>Acacia</i> , <i>Bauhinia</i> , <i>Erythrina</i>), Fagaceae (<i>Quercus</i>), Gentianaceae (<i>Anthocleista</i>), Lauraceae (<i>Persea</i>), Meliaceae (<i>Ekebergia</i> , <i>Khaya</i>), Myrsinaceae (<i>Maesa</i>), Myrtaceae (<i>Eucalyptus</i> , <i>Psidium</i>), Oleaceae (<i>Ligustrum</i>), Piperaceae (<i>Piper</i>), Rosaceae (<i>Crataegus</i> , <i>Malus</i> , <i>Prunus</i> , <i>Rosa</i>), Rubiaceae (<i>Coffea</i> , <i>Crossopteryx</i> , <i>Sarcocephalus</i>), Ulmaceae (<i>Celtis</i>), Zingiberaceae (<i>Aframomum</i>) | |
| 175. <i>Gonimbrasia zambesina</i> (Walker, 1865) | Angola, Botswana, Kenya, Malawi, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe | Anacardiaceae (<i>Mangifera</i> , <i>Ozoroa</i> , <i>Rhus</i> , <i>Schinus</i>), Apocynaceae (<i>Nerium</i>), Ebenaceae (<i>Diospyros</i>), Fabaceae (<i>Delonix</i>), Fagaceae (<i>Fagus</i>), Lecythidaceae (<i>Barringtonia</i>), Rosaceae (<i>Prunus</i>), Sapindaceae (<i>Deinbollia</i>), Verbenaceae (<i>Petrea</i>) | ROBINSON et al (2010), DE PRINS & DE PRINS (2015) |
| 176. <i>Gynanisa maja</i> (Klug, 1836) | Angola, Botswana, Chad, Democratic Republic of Congo, Eritrea, Kenya, Malawi, Mozambique, Namibia, Nigeria, Senegal, Somalia, South Africa, Tanzania, Zambia, Zimbabwe | Fabaceae (<i>Acacia</i> , <i>Berlinia</i> , <i>Brachystegia</i> , <i>Cassia</i> , <i>Colophospermum</i> , <i>Elephantorrhiza</i> , <i>Julbernardia</i> , <i>Laburnum</i> , <i>Peltophorum</i> , <i>Pterocarpus</i> , <i>Robinia</i> , <i>Schotia</i>), Fagaceae (<i>Quercus</i>), Rosaceae (<i>Prunus</i>) | ROBINSON et al (2010), DE PRINS & DE PRINS (2015) |
| Saturniini | | | |
| 177. <i>Actias selene</i> (Hübner, 1807) | Afghanistan, India, China, Korea, Sundaland, Andaman Islands | Anacardiaceae (<i>Lannea</i> , <i>Malosma</i> , <i>Mangifera</i> , <i>Schinus</i>), Betulaceae (<i>Alnus</i> , <i>Betula</i>), Combretaceae (<i>Terminalia</i>), Coriariaceae (<i>Coriaria</i>), Corylaceae (<i>Corylus</i>), Ericaceae (<i>Andromeda</i> , <i>Lyonia</i> , <i>Rhododendron</i>), Euphorbiaceae (<i>Sapium</i>), Fagaceae (<i>Castanea</i> , <i>Quercus</i>), Hamamelidaceae (<i>Liquidambar</i>), Juglandaceae (<i>Juglans</i> , <i>Pterocarya</i>), Lauraceae (<i>Cinnamomum</i>), Lythraceae (<i>Lagerstroemia</i> , <i>Lawsonia</i>), Malvaceae (<i>Hibiscus</i>), Meliaceae (<i>Azadirachta</i> , <i>Cedrela</i>), Moringaceae (<i>Moringa</i>), Oleaceae (<i>Ligustrum</i> , <i>Syringa</i>), Rhamnaceae (<i>Frangula</i> , <i>Rhamnus</i>), Rosaceae (<i>Crataegus</i> , <i>Malus</i> , <i>Photinia</i> , <i>Prunus</i> , <i>Pyrus</i>), Rutaceae (<i>Zanthoxylum</i>), Salicaceae (<i>Salix</i>), Symplocaceae (<i>Symplocos</i>) | ROBINSON et al (2010), IOPPOLO (2011), SAVELA (2015) |

Tab. 3. – cont.

| Lepidopteran taxa | Distribution | Host plants (families and genera) for caterpillars | Data sources |
|--|---|---|---|
| 178. <i>Antheraea paphia</i> Linnaeus, 1758 | India, Sri Lanka, Thailand | Anacardiaceae (<i>Anacardium</i>), Apocynaceae (<i>Carissa</i>), Bombacaceae (<i>Bombax</i>), Celastraceae (<i>Celastrus</i>), Combretaceae (<i>Anogeissus</i> , <i>Terminalia</i>), Corylaceae (<i>Carpinus</i>), Dipterocarpaceae (<i>Shorea</i>), Ericaceae (<i>Erica</i>), Euphorbiaceae (<i>Hevea</i> , <i>Ricinus</i>), Fabaceae (<i>Bauhinia</i> , <i>Chamaecrista</i> , <i>Dalbergia</i>), Fagaceae (<i>Fagus</i> , <i>Quercus</i>), Lecythidaceae (<i>Careya</i> , <i>Planchonia</i>), Lythraceae (<i>Lagerstroemia</i> , <i>Sonneratia</i>), Meliaceae (<i>Cipadessa</i>), Moraceae (<i>Ficus</i>), Myrtaceae (<i>Eucalyptus</i> , <i>Eugenia</i>), Rhamnaceae (<i>Ziziphus</i>), Rosaceae (<i>Prunus</i>), Rubiaceae (<i>Canthium</i>), Rutaceae (<i>Chloroxylon</i>), Salicaceae (<i>Salix</i>), Sapotaceae (<i>Madhuca</i>), Theaceae (<i>Camellia</i>), Sapindaceae (<i>Dodonaea</i>), Thymeleaceae (<i>Gnidia</i>), Verbenaceae (<i>Tectona</i>) | ROBINSON et al (2010) |
| 179. <i>Argema mimosae</i> (Boisduval, 1847) | Angola, Democratic Republic of Congo, Ethiopia, Kenya, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia, Zimbabwe, | Anacardiaceae (<i>Malosma</i> , <i>Sclerocarya</i>), Burseraceae (<i>Commiphora</i>), Euphorbiaceae (<i>Excoecaria</i> , <i>Spirostachys</i>), Hamamelidaceae (<i>Liquidambar</i>), Juglandaceae (<i>Juglans</i>), Myrtaceae (<i>Eucalyptus</i>) | ROBINSON et al (2010), DE PRINS & DE PRINS (2015), |
| 180. <i>Argema mittrei</i> (Guérin-Méneville, 1847) | Madagascar | Altingiaceae (<i>Liquidambar</i>), Anacardiaceae (<i>Cotinus</i> , <i>Malosma</i> , <i>Pistacia</i> , <i>Rhus</i> , <i>Sclerocarya</i> , <i>Schinus</i> , <i>Toxicodendron</i>), Cunoniaceae (<i>Weinmannia</i>), Euphorbiaceae (<i>Uapaca</i>), Fabaceae (<i>Mimosa</i>), Juglandaceae (<i>Juglans</i>), Myrtaceae (<i>Eucalyptus</i> , <i>Eugenia</i>) | OPIE (2015), ROBINSON et al (2010) |
| 181. <i>Ceranchia apollina</i> Butler, 1879 | Madagascar | Apocynaceae (<i>Stephanotis</i>) | FISCHER (2014) |
| 182. <i>Cricula agria</i> Jordan, 1909 | India | ?Fagaceae (<i>Quercus</i>), Lauraceae (<i>Persea</i>), Rosaceae (<i>Prunus</i>) | JORDAN (1909) |

Selected phenomena seen during butterfly exhibitions in BG PJŠU

Biodiversity

Though only a small part of world lepidopteran fauna can be seen during exhibitions, the presented species are conspicuous representatives from tropical and subtropical regions from all over the world. They are usually belonging to the families Lycaenidae, Nymphalidae, Papilionidae, Pieridae and Saturnidae.

Approximately 200 species were available to visitors in BG PJŠU, 182 of them were registered as active ones in the greenhouse and dealt with in more detail (Fig. 2, Tab. 3). Identity of species was assigned by suppliers, though not in all cases (missing individual names in mixes of species). Sometimes misidentifications in provided lists also occurred. Polymorphic species were often represented by more than one form.

Reproduction and life stages

In some cases, mating behaviour (Fig. 3), seeking and checking potential host plants (Tab. 2) by females, egg laying and even development of caterpillars (Fig. 4) could be observed.



Fig. 3. Group of *Papilio demoleus* individuals during mating on *Antigonon leptopus*.



Fig. 4. Caterpillars of (from top left to bottom right) *Caligo* sp., *Eryphanis automedon*, *Attacus atlas* and *Siproeta stelenes* from the Victoria greenhouse in BG PJŠU.

Therefore, the visitors could meet not only adult butterflies but also all other stages of their developmental cycle. The details of imago morphology can be seen from the close view even at live butterflies, as many of the presented species are not timid. Eggs and caterpillars were available especially in *Caligo* sp. (on plants of the genera *Musa*, *Heliconia*, *Calathea*, *Maranta*, *Alpinia* and others), more rarely in other lepidopteran species. Various types of pupae from suppliers can be seen arranged in boxes.

Types and functions of wing colorations

Wide variety of wing colorations in butterflies and moths is one of the main reasons of attractiveness of these insects for visitors. Such colours and patterns evolved for different purposes, enhancing survival probability in natural environments. Different types of such butterfly wings are discussed e.g. by HOSKINS (2015).

Hiding from predators

There are many means which are used by butterflies to hide themselves from predators. HOSKINS (2015) shows the following types:

- camouflage as colour, pattern and texture adaptations that enables to blend against background
- disguise - appearance similar to another natural object, e.g. leaf (examples of imitations of dead brown leaves in Fig. 5)
- disruptive coloration
- transparent wings

Aposematic coloration

Aposematic coloration means distinct colours and patterns (Fig. 6) for warning predators that a potential prey species is unpalatable, toxic or otherwise dangerous. According to HOSKINS (2015), all vertebrates including insectivorous birds associate greens and blues with safety, and inherently regard red, orange, yellow and white as signs of danger. Next to it, birds can remember unpleasant experiences associated with their attempts to eat unpalatable butterflies. In the future, such birds are avoiding butterflies with coloration associated with bad taste. However, such learning process could be associated with high mortality of butterfly individuals, it depends also on species of specialized insectivorous birds (e. g. PINHEIRO 1996, 2004).

Diematic patterns

According to HOSKINS (2015), diematic patterns are defensive markings which have the effect of startling or frightening potential predators. This type is often represented by a pair of false-eyes on hind wings of some Saturnidae moths (Fig. 7). Snake head-like forms at tips of fore wings in some other moths (*Attacus* sp. or *Rothschildia* sp.) are also supposed to have this effect and can be seen in live butterfly exhibitions in BG PJSŮ.



Fig. 5. Wings imitating dead leaves, from top left to bottom right: *Consul fabius*, *Hypna clytemnestra*, *Elymnias hypermnestra*, *Doleschalia bisaltide*, *Fountainea nobilis*, *F. eurypyle*, *Salamis cacta*, *Kallima* sp.



Fig. 6. *Idea leuconoe* - both adult and pupae possess aposematic coloration showing their unpalatability.



Fig. 7. Eye spots on hind wings in African moths *Bunea alcinoe* (left) and *Gyanisa maja* (right) (both Saturnidae) manifested after irritation to deter potential predators.

Diverting patterns

It is supposed that effect of eye spots can be deterrent only temporarily and later, on the contrary, these spots can be targets of attack. For that reasons, ocelli on the underside of the wings in many butterfly species (Fig. 8) can possibly serve in diverting attention of predators away from the butterfly's body. After attack directed to false eyes on the border of the wings, a butterfly can gain time to escape.



Fig. 8. Eyespots on underside of the wings, from top left to bottom right: *Morpho helenor*, *Caligo telamonius*, *Opsiphanes tamarindi*, *Eryphanis automedon*, *Mycalesis intermedia*, *Archaeoprepona demophon*, *Salamis parhassus*, *Morpho polyphemus*.

Probably for similar reasons, some butterflies possess streaks on the underside of the wings (Fig. 9) to lead attention to the opposite end of the body. It is sometimes accompanied with a spot like a false eye, or even with tail-like protuberances simulating antennae apart from the vulnerable main body parts (HOSKINS 2015).



Fig. 9. *Amathusia phidippus* (left) and *Colobura dirce* (right) with streaks leading attention of potential attacker to the rear end of butterfly wings.

Other possible functions of wing coloration

There can be different wing patterns serving in communication between individuals of the same butterfly species. For example intensive blue flash coloration on the upperside of *Morpho* species is supposed to be of the mentioned purpose, e.g. during mating behavior. But sudden closing the wings can cause also sudden disappearing of the bright butterfly coloration from predators and exposing its eye spots on underside of the wings to them.

Dark colours of wings in some butterflies can serve for soaking up heat in the sun which can be important for their thermoregulation (HOSKINS 2015).

Mimicry

Similar colour patterns of butterfly wings in different species from the same region are usually regarded as examples of mimicry. Previously discussed aposematic coloration and unpalatability are basic assumptions for mimicry cases which can be often visible also in live exhibitions. Unpalatability is usually a result of **toxicity of food plants** used by caterpillars and toxic properties are consequently transferred to pupae and bodies of imagines. Eventually, toxic compounds can be sequestered also by adult butterflies by feeding on some plant species (BROWER et al. 2010, CARDOSO & GILBERT 2013, HOSKINS 2015).

Mimetic phenomena are widely occurred within lepidopteran insects (KOMÁREK 2004), the same colorations can be shared not only by adult butterflies or moths

but also by caterpillars of different species. Though chemical mimicry is also described in insects (including Lepidoptera), most of known cases is connected just with expressive aposematic colorations.

True mimicry with different species sharing the same coloration evolved due to the pressure from visually oriented predators, especially birds (e.g. PINHEIRO 2004). Usually one of participants in mimicry relationship is a model, the other one is a mimic which is visually adapted to model. Batesian mimicry represent relationship in which a model is unpalatable and a palatable mimic is parasitising on model species (by increasing its own protection from predator attacks and decreasing it in a model). In Müllerian mimicry type both participants are unpalatable and sharing similar wing coloration and patterns, it symbiotically reduces the risk of attack from unexperienced predators.

Some of butterfly species in live exhibitions are co-occurring also in their natural habitats and several of them forming mimetic pairs (of Batesian or Müllerian type) or more numerous mimicry rings. Mimicry ring is a group of sympatric species (or their forms) sharing a common warning pattern (JORON & MALLET 1998). Usually it is a complex of unpalatable species, together with some palatable ones, that have converged on the same colour pattern (MALLET & GILBERT 1995).

Visitors of BG PJŠU could see the participants in mimicry relationships between butterflies from different parts of the world. In the following cases at least 2 species from the same mimicry ring or mimetic pairs (and usually corresponding subspecies or forms from the same region) have been presented:

Central and South America:

- 'Tiger' mimicry ring (MALLET & GILBERT 1995): unpalatable butterflies (some forms of *Heliconius ismenius*, *H. hecale*, *H. numata*, *Mechanitis polymnia*, *Lycorea halia*, *Tithorea harmonia*, *T. tarricina*, *Eueides isabella*) and palatable species (*Consul fabius*) (Fig. 10).
- 'Orange' mimicry ring (MALLET & GILBERT 1995): unpalatable *Dryas julia*, *Dione juno*, *Dryadula phaetusa*, *Agraulis vanillae* (Fig. 11).
- 'Blue' mimicry ring (MALLET & GILBERT 1995): unpalatable *H. sara*, *Laparus doris* (Fig. 12)
- Several representatives from at least 29 pairs of corresponding geographical forms of *Heliconius erato* and *H. melpomene* (Fig. 13) with almost identical color pattern in each pair (HOSKINS 2015). This includes also 'red' mimicry ring according to MALLET & GILBERT (1995), where some forms of these two unpalatable species (and some other *Heliconius* species) with similar red patterns are classified.
- Male of sexually dimorphic palatable *Papilio erostratus* species mimics unpalatable *Battus polydamas*, while its female mimics different unpalatable model - *Parides photinus* (KUNTE 2009). Palatable *Euritides thymbraeus* mimics *P. photinus* too (COLLINS & MORRIS 1985), while palatable females of some forms of *P. astyalus* and *P. androgeus* mimic unpalatable *B. polydamas* (SPADE et al. 1988) (Fig. 14).



Fig. 10. Representatives of 'tiger' mimicry ring (from top left to bottom right): *Tithorea tarricina*, *Heliconius hecale*, *H. ismenius metaphorus*, *Eueides isabella*, *Mechanitis polymnia*, *Lycorea halia*, *Tithorea harmonia*, *H. numata*, *Consul fabius*, *H. ismenius telchinia*.



Fig. 11. Orange mimetic ring represented by *Dryas julia* (top left), *Dione juno* (top right), *Agraulis vanillae* (bottom left) and *Dryadula phaetusa* (bottom right).



Fig. 12. Mimetic pair of *Lparagus doris* - blue form (top) and *Heliconius sara* (bottom), an example of Müllerian mimicry.



Fig. 13. Different forms of *Heliconius erato* (top row) and *H. melpomene* (bottom row). Corresponding mimetic pairs from the same region are in columns, each such pair represents an example of Müllerian mimicry.



Fig. 14. Top row: *Battus polydamas* (top left) and its mimics *Papilio erostratus* ♂ (top middle) and *Papilio astyalus* ♀ (top right). Bottom row: *Parides photinus* (bottom left) and its mimics *P. erostratus* ♀ (bottom middle) and *Mimoides thymbraeus* (bottom right). *P. erostratus* is here as an example of dimorphic mimicry where male mimics different model than its female.

- Palatable *P. anchisiades*, female of *P. torquatus* and unpalatable *Parides* sp. mentioned by HOSKINS (2015) and palatable *Eurytides ilus branchus* and unpalatable *Parides eurimedes* according to COLLINS & MORRIS (1985) deal similar wing patterns, at least in some of their forms (Fig. 15).
- Palatable *Siproeta stelenes* and unpalatable *Philaethria dido* (HOSKINS 2015) (Fig. 16).



Fig. 15. Non mimetic ♂ *Papilio torquatus* (top left) and its ♀ (top middle) mimicking unpalatable *Parides* sp., like *P. iphidamas* (♀, bottom middle) and *P. eurimedes* (♀, bottom right). *Papilio anchisiades* (top right) and *Mimoides ilus branchus* (bottom left, captured in a spider's web) are also mimicking these *Parides* models.



Fig. 16. Mimetic pair of palatable *Siproeta stelenes* (left) and unpalatable *Philaethria dido* (right), an example of Batesian mimicry.

Africa

- Female of palatable *Hypolimnas misippus* and corresponding model form of unpalatable *Danaus chrysippus* (PUNNETT 1915) (Fig. 17), both species are widespread also in Asia and Australia.
- Palatable *Papilio dardanus* and unpalatable *Danaus chrysippus* (COLLINS & MORRIS 1985), though only some not corresponding mimetic forms of both species could be seen in BG PJSU.



Fig. 17. Non-mimetic ♂ of *Hypolimnas missipus* (left column) and its ♀ (middle column) mimicking *Danaus chrysippus* (right column)

South-Eastern Asia

- Unpalatable *Euploea* sp. (*E. core*) are supposed to be models for some visually similar mimicking forms of palatable *Papilio clytia* and females of *Hypolimnas bolina* (PUNNETT 1915) (Fig. 18). Some other form of *P. clytia* (not presented in BG PJŠU) mimics also other available distasteful species – *Tirumala septentrionis* (COLLINS & MORRIS 1985).
- Unpalatable *D. chrysippus* mentioned above among African species is very widespread and in Asia it is mimicked also by other species, e.g.: *Cethosia cyane* (male) and *Elymnias hypermnestra* (STOLBERG 2014) (though only not corresponding form occurred in BG PJŠU).
- Unpalatable *T. septentrionis* is a model also for females of palatable *Pareronia valeria* (KUNTE 2008), though only non-mimetic male of this species was seen in BG PJŠU.



Fig. 18. *Euploea core* (left), one of *Euploea* sp. mimicked by some forms of *Papilio clytia* (middle) and by ♀♀ of *Hypolimnas bolina* (right).

There could be seen also individual species from other mimetic groups in BG PJSU, though without the respective counterparts. There were diverse forms of palatable mimics (*Euxanthe wakefieldi*, *Papilio echerioides*, *P. memnon*, *P. polytes*, *P. polyxenes*, *Phalanta phalantha*) and distasteful individual model species from not corresponding groups (*Godyris nero*, some *Heliconius* sp. not mentioned above, *Idea leuconoe*, various *Ideopsis* species, *Methona confusa*) (ROGERS 1911, COLLINS & MORRIS 1985, BECCALONI 1995, BROWER 2010, HERBISON-EVANS & CROSSLEY 2015, JORON 2015, NEUBAUER 2015, SAVELA 2015).

In many cases, visitors of such live butterfly exhibitions can see also differences in flight characteristics in individual representatives of mimetic groups. Palatable species with erratic and substantially faster flight are usually in contrast to unpalatable butterflies which tend to fly more slowly and regularly (DUDLEY 2000).

However, it should be mentioned, that not all cases with similarly looking wing patterns must represent mimicry relationships. Convergent evolution caused by some other environmental factors (except predation pressure mentioned above) should also be taken into account. Therefore, these phenomena are still under investigation and individual experts can differ in their opinions regarding mimetic relations between individual lepidopteran species (some differences are discussed e.g. by KUNTE 2008).

Butterfly – plant interactions

Interactions between lepidopteran and plant taxa are of principal importance in ecology of the respective species (their overall characters, way of life, behavior and distribution in nature). Especially it is the case of host plants for caterpillars but in many species feeding of adults can be also of principal importance. Mimicry relationships discussed above are a good example of interconnections between plant characteristics and butterflies and moths as primary consumers formed by selective pressure from predators, all in feedbacks.

In the Victoria greenhouse of BG PJSU, many potential host plants for presented butterflies are available (Tab. 2). Only in some cases these plants are really used for laying eggs as a food source for caterpillars (Fig. 4) but it is enough for a good demonstration. Considering plants from other greenhouses, there are much more potential hostplants (MÁRTONFIOVÁ et al. 2010) but of course, most of these plants are rare individuals growing in BG PJSU and they are not intended for such experiments. Nevertheless, visitors could be properly informed that enormous richness of higher plant taxa in nature is considerably influenced by similarly variable lepidopterans and vice-versa. Live butterfly show is a great opportunity for effective education on these selected aspects in real ecology, not through abstract constructions.

As for imagines, some of the species can use food elements from living plants (mostly nectar from flowers, Fig. 19), plant products (fresh or rotting fruits offered on special feeder devices) or other sources. The observed cases of using different food by individual butterfly species in BG PJSU are summarised in Tab. 4.



Fig. 19. *Papilio demodocus* and *P. memnon* feeding from flowers of *Musa velutina* (top) and a group of *Caligo telamonius memnon* butterflies feeding on rotting bananas on the same inflorescence about 2 months later (bottom) in the Victoria greenhouse of BG PJŠU.

Natural enemies

The overall illusion of natural tropical environment with different ecological relations between butterflies and plants can be completed also by actions of some natural enemies. Though most of the presented lepidopteran species are naturally short-lived in imaginal stage, some of them can be killed also untimely. Of course, this is undesirable from the viewpoint of organizers with their usual efforts to show as much healthy butterflies and moths as possible to visitors. On the other hand, such occasional incidents can indicate what are everyday natural threats the butterfly and moths must withstand in their specific ecosystems all over the world.

Since 2006 there were used no pesticides in most of exposition greenhouses (including the Victoria greenhouse) in BG PJSU and only biological control measures against plant pests were applied. It forms suitable, non-toxic conditions for butterflies and other animals kept in greenhouses for visitors (e.g. fishes in the basins, birds in cages etc.). Predatory and parasitic insects and mites and enthomopatogenic fungi and bacteria are not only these types intentionally released to suppress plant pests but there are also other organisms widely occurred spontaneously within greenhouses. Some of them are able to attack also exotic butterflies of all stages (Fig. 20).



Fig. 20. Some of the natural enemies of butterflies seen in the Victoria greenhouse of BG PJSU: pupa of Papilionidae parasitised with *Pteromalus* wasps (left); *Papilio anchisiades* captured by a tangle-web spider *Parasteatoda tepidariorum* (top middle); *Morpho helenor peleides* fallen into the water basin and attacked by fishes *Carassius auratus* (bottom middle); caterpillar of *Caligo* sp. infected probably with bacterial pathogens (right).

Conclusions

Live butterfly exhibitions provides unusual experiences for different categories of people spending time at such events. Everyone there can gain new experiences and inspiration, from childrens, through common general public, to more demanding students, amateurs or professionals in various areas of natural sciences. Just contact with such interesting living forms has apparent **educational effects**. This influence can be properly reinforced by suitable organization, illustrative tables, propagative materials, articles and web pages to allow visitors to see wider context. In this sense, the exhibition spaces with wide range of plants utilizable by butterflies are exceptionally important for demonstrations of ecological relationships. Botanical gardens are institutions best able to provide such environment outside the areas of natural occurrence of both lepidopteran and plant species.

Particular attention in BG PJŠU is paid especially to the aspects usually not dealt with (or only superficially) in similar exhibitions elsewhere. Above all, various lepidopteran-plant interactions and other phenomena more or less directly related to these interactions (like mimicry, influencing natural enemies, etc.) are discussed and presented in suitable form. However, much more can be seen there by visitors. Last but not least, these exhibitions could help people to recognize the immense diversity of living forms, while 182 lepidopteran species with their host plant genera in Tab. 3 are only a small sample of real richness and possible relationships of these groups in the world.

Next to the educational effects in the sense of new knowledge in entomology, botany, ecology, evolutionary theory, etc., such exhibitions could be very important also from the viewpoint of **nature protection** awareness. Biodiversity of lepidopteran species is strongly depended on healthy ecosystems in the respective countries. In this regard, local economy in tropical areas based on pupae production or tourism connected to butterfly species richness could be acceptable alternative to the destructive exploitation of tropical forests through logging, mining or transformation to agricultural land (SAUL-GERSHENZ 2009).

Under certain conditions, spaces in botanical gardens can be used also for dealing with specific **research problems** related (not only) to lepidopteran-plant interactions. It is possible to form specific qualitative and quantitative composition of plants in an area with controlled abiotic factors (temperature, humidity, light, soil properties). In such space, selected populations of butterflies can live (either from pupae delivered by external suppliers, or from own rearing in separate spaces, if possible). The range of research tasks that could be solved on such basis could be limited only by available technique or laboratory equipment in botanical gardens or their allied institutions.

There are many important groups of insects (and other organisms) but most of them are usually not such favourite like butterflies in wide public. This primary interest in Lepidoptera should be used, e.g. through live butterfly exhibitions, to increase people's knowledge on nature in its complex. Consecutively, such stimulated people could decide to study it in more detail or at least better perceive and eventually participate in solving rising environmental problems.

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