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THE FOOD-PLANTS OF EUROPEAN BUTTERFLIES.

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Kaltenbach is publishing a work entitled *Die Pflanzen-Feinde aus der Classe der Insecten*, two parts of which have appeared and carry the investigation through the willows. He enumerates all the German insects known to feed upon particular plants; annotated lists of more than three hundred species of insects are sometimes ascribed to a single tree. Among these are many butterflies, and by collating them I have prepared the following list, believing that, as it is fuller than any yet published, it will be of great service to those who are endeavoring to discover or extend the histories of our own butterflies. As soon as the work of Kaltenbach is completed, a supplement will be prepared to this list. The nomenclature of the butterflies is altered to make it accord with Staudinger's last catalogue.

1. *Apatura iris*—*Salix caprea*, *S. aurita*.
2. " *ilia*—*Salix*, *Populus tremula*, *P. dilatata*.
3. " " *var. clytie*—*Populus tremula*, *P. canescens*.
4. *Limenitis populi*—*Populus tremula*.
5. " *camilla*—*Lonicera coerulea*, *L. xylosteum*, *L. caprifolium*, *L. periclymenum*.
6. " *sibilla*—Same plants as the preceding.
7. *Vanessa levana*—*Urtica dioica*.
8. " *egea*—*Salix*, *Parietaria officinalis*.
9. " *C. album*—*Ulmus campestris*, *Humulus lupulus*, *Urtica urens*, *Ribes rubrum*, *R. grossularia*, *Corylus avellana*, *Lonicera xylosteum*.
10. " *polychloros*—*Pyrus communis* (pear), *P. malus* (apple), *P. cydonia* (quince), *P. cerasus* (cherry), *Ulmus*, *Salix*, *Populus*, *Cornus*.

11. *Vanessa xanthomelas*—Populus, Ulmus, Salix caprea, S. acuminata, S. glauca, S. vitellina.
12. " *L. album*—Ulmus, Salix.
13. " *urticae*—Urtica hispida, etc.
14. " *io*—Urtica, Humulus.
15. " *antiopa*—Salix, Betula, Populus, Tilia (Ulmus is not given.)
16. " *atalanta*—Urtica dioica, U. urens.
17. " *cardui*—Cirsium oleraceum, C. arvense, C. palustre, C. lanceolatum, Carduus natans, Malva rotundifolia, Gnaphalium arenarium, G. luteoalbum, Achillea millefolium, Artemisia vulgaris, Filago arvensis, Onopordum acanthium, Cynara scolymus, Centaurea benedicta, Urtica dioica, Carlina.
18. *Argynnis aphirape*—Polygonum distorta, Viola palustris.
19. " *sylene*—Viola canina, V. tricolor.
20. " *euphrosyne*—Viola canina.
21. " *pales*—Viola montana.
22. " *dia*—Viola odorata.
23. " *daphne*—Viola, Rubus idæus, R. fruticosus.
24. " *ino*—Urtica.
25. " *lathonia*—Viola arvensis, V. tricolor, Hedysarum, onobrychis, Anchusa officinalis.
26. " *aglaja*—Viola canina.
27. " *niobe*—Viola odorata, V. tricolor.
28. " *adippe*—Viola odorata, V. tricolor.
29. " *paphia*—Hesperis tristis, Viola canina, Rubus idæus, Urtica.
30. " *pandora*—Viola.
31. *Melitæa cynthia*—Plantago lanceolata, Pedicularis rostrata.
32. " *maturna*—Melampyrum nemorosum, Populus tremula, Salix capræa, Fraxinus excelsior, Veronica, Plantago.
33. " *aurinia*—Geranium sanguineum, Scabiosa, Veronica, Plantago.
34. " *cinxia*—Plantago lanceolata, Veronica, Hieracium pilosella, H. canescens.
35. " *phæbe*—Centaurea scabiosa, C. jacea.
36. " *trivia*—Verbascum thapsus, V. nigrum.
37. " *didyma*—Artemisia abrotanum, Plantago, Centaurea, Stachys, Linaria vulgaris, Veronica, Teucrium chamædrys.

38. *Melitæa dictynna*—*Melampyrum nemorosum*, *Spiræa aruncus*, *S. ulmaria*, *Veronica*.
39. " *athalia*—*Melampyrum sylvaticum*, *M. pratense*, *M. nemorosum*, *Plantago*, *Veronica chamaedrys*, *Chrysanthemum corymbosum*, *Digitalis ochroleuca*.
40. " *aurelia*—*Plantago*.
41. " " var. *britomartis*—*Veronica chamaedrys*, *Melampyrum pratense*.
42. " *parthenic*—*Plantago lanceolata*, *Centaurea jacea*, *Melampyrum pratense*.
43. *Nemeobius lucina*—*Rumex*, *Primula*.
44. *Thecla betula*—*Prunus spinosa*, *P. armeniaca*.
45. " *spini*—*Rhamnus saxatilis*, *R. cathartica*, *R. frangula*, *Prunus spinosa*, *P. domestica*.
46. " *W. album*—*Ulmus campestris*.
47. " *ilicis*—*Ulmus*.
48. " *acaciæ*—*Prunus spinosa*.
49. " *pruni*—*Prunus spinosa*, *Amygdalus communis*, *Rhamnus cathartica*.
50. " *rubi*—*Prunus spinosa*, *Rhamnus*, *Cytisus*, *Hedysarum onobrychis*, *Amygdalus persica*, *Rubus*, *Genista*, *Ledum palustre*.
51. *Lycæna baltica*—*Spartium*, *Colutea*, *Phaca boetica*.
52. " *telicanus*—*Lythrum salicaria*.
53. " *argiades*—*Lotus corniculatus*, *Anthyllis vulneraria*, *Medicago falcata*, *M. lupulina*, *Trifolium arvense*, *T. pratense*, *Pisum sativum*.
54. " *argyrotoxus*—*Genista*, *Colutea arborescens*, *Trifolium*.
55. " *argus*—*Rhamnus*, *Trifolium montanum*, *Mellilotus officinalis*, *Genista germanica*, *Spartium scoparium*, *Hedysarum onobrychis*, *Lotus corniculatus*, *Erica vulgaris*.
56. " *optilete*—*Vaccinium oxycoccos*.
57. " *orion*—*Sedum telephium*.
58. " *astrarche*—*Erodium cicutarium*, *Geranium dissection*, *G. pusillum*.
59. " *icarus*—*Trifolium*, *Mellilotus*, *Genista*, *Ononis spinosa*, *Astragalus glycyphyllos*, *Fragaria vesca*, *Medicago*.

60. *Lycæna bellargus*—Trifolium, Coronilla varia, C. montana, Hippocrepis comosa, Genista sagittalis, Stachys.
61. " *coridon*—Vicia, Astragalus, Coronilla varia.
62. " *hylas*—Trifolium, Melilotus officinalis.
63. " *dolus*—Trifolium.
64. " *damon*—Hedysarum onobrychis.
65. " *argiolus*—Rhamnus frangula, Mespilus, Pyrus malus.
66. " *minima*—Anthyllis vulneraria.
67. " *semiargus*—Melilotus.
68. " *cyllarus*—Astragalus glycyphyllos, Trifolium, Melilotus, Genista sagittalis, G. germanica, Hedysarum onobrychis.
69. " *jolas*—Columba arborescens.
70. *Polyommatus virgaurea*—Solidago virgaurea, Rumex, acutus, R. acetosa.
71. " *dispar*—Rumex, Polygonum.
72. " *hippota*—Rumex acetosa.
73. " *alciphron*—Rumex acetosa.
74. " *dorilis*—Rumex acetosa, R. acetosella.
75. " *phlaeas*—Rumex acetosa.
76. " *amphidamas*—Rumex acetosa, Polygonum bistorta, Viola canina.
77. *Rhodocera rhamni*—Rhamnus cathartica, Frangula, Mespilus germanica, Pyrus.
78. " *cleopatra*—Rhamnus alpinus.
79. *Colias palaeno*—Hydrocotyle vulgaris, Vaccinium uliginosum.
80. " *hyale*—Coronilla varia, Trifolium, Vicia.
81. " *myrmidon*—Cytisus biflorus, C. nigricans.
82. " *edusa*—Onobrychis, Cytisus.
83. *Pieris brassicae*—Brassica, Rhamnus sativus, Cochlearia armoracia, Sinapis, Lepidium sativum, Tropæolum, Cheiranthus annuus.
84. " *rapæ*—the same plants as the preceding, and also Reseda.
85. " *napi*—Brassica oleracea, B. napus, Reseda lutea, R. luteola, R. odorata, Turritis glabra, Alliaria officinalis, Sinapis.
86. " *daphidice*—Reseda, lutea, Turritis glabra, Erucastum, Rhamnus raphanistrum, Sisymbrium sophia, Capsella bursa-pastoris, Alyssum incanum, Sinapis, Thlaspi.

87. *Aporia cratoegi*—*Crataegus oxyacantha*, *Prunus spinosa*, *P. domestica*, *P. padus*, *Pyrus malus*, *P. communis*, *Mespilus*, *Sorbus*.
88. *Anthocaris cardamines*—*Alliaria officinalis*, *Cardamine impatiens*, *Turritis glabra*, *Brassica campestris*, *Hesperis*, *Sinapis*, *Thlaspi*.
89. *Leucophasia sinapis*—*Lotus corniculatus*, *Lathyrus pratensis*, *Trifolium pratense* (*Sinapis* is not given).
90. *Parnassius apollo*—*Sedum album*, *Telephium*, *Sempervivum*, *tectorum*.
91. " *mnemosyne*—*Corydalis bulbosa*, *C. solida*.
92. *Papilio sinon*—*Prunus spinosa*, *P. domestica*, *Pyrus malus*, *P. communis*, *Amygdalus*, *persica* *A. communis*, *Quercus*.
93. " *machoan*—*Carum carui*, *Anethum foeniculum*, *Apium graveolens*, *Daucus carota*, *Pimpinella saxifraga*, *Angelica sylvestris*, *Peucedanum chabrei*, *Heracleum*, *Oreoselinum*.
94. *Nisoniades tages*—*Iberis pinnati*, *Eryngium campestre*, *Lotus corniculatus*, *Coronilla varia*.
95. *Spilothyrus alcea*—*Malva*.
96. *Syrichius alvens*—*Polygala chamæbuxus*.
97. " *malva*—*Malva moschata*, *Plantago lanceolata*, *Fragaria*, *Comarum*, *Rubus*.
98. " *sao*—*Rubus idaeus*.
99. *Carterocephalis palæmon*—*Plantago*.
100. *Hesperia sylvanus*—*Plantago major*, *Althea rosea*, *Malva moschatta*, *Lavatta*, *Lavatera communis*.
101. " *comma*—*Coronilla varia*.

NOTES ON COLLECTING CATOCALAS.

BY ROBERT BUNKER, ROCHESTER, N. Y.

In many respects the Catocalas are among the most interesting of the moths. The contrast of color between their fore and hind wings renders them objects of great beauty, and hence these fair