609E$_2$

Chemical evidence that the larvae of the butterfly *Talicada nyseus* feed on the lichen *Leproloma sipmanianum*

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Hesbacher *et al.* have shown that moths of the family Arctiidae (Lepidoptera) accumulate lichen phenolics such as parietin and atranorin, which may be used in defence. On the other hand; members of the butterfly family (Lycaenidae) are considered to be plant feeders. However, earlier we reported, for the first time, the sequestration of five lichen products (zeorin **1**, β-sitosterol **2**, a C_{43} fatty acid ester **3**, atranorin **4**, (+)-usnic acid **5**) belonging to the crustaceous lichen *Leproloma sipmanianum* Kümmerl & Leuckert by the adult butterfly *Talicada nyseus* Guérin in Beragala (Uva Province).[2] The host plant of the butterfly is *Bryophyllum calycinum.* The present study was undertaken in order to determine the stage of entry of the compounds into the life cycle of the butterfly. Wild-caught imagines were reared on *L. sipmanianum* and larvae of *T. nyseus* were reared separately on *B. calycinum* and *L. sipmanianum* in laboratory cages. Each cage (moistened with wet cotton wool) was supplied with a receptacle containing a 10 M sugar solution and honey. Specimens (adults, larvae and larval waste) of *T. nyseus* collected (in the wild and from experimental cages) were freeze-dried, ground in a motar and extracted with CH_2Cl_2. Compounds present in the extracts were analysed by HPLC using PDA 996 detector using linear gradient solvent from 100 % A (10 % MeOH, 90 % H_2O adjusted to pH 2 with o-phosphoric acid) to 100 % B (MeOH). Of the compounds found in the lichen *L. sipmanianum* only one, namely β-sitosterol, is found in *B. calycinum*. We had previously reported that wild-caught imagines of *T. nyseus* in Beragala contained specific lichen substances (**1**-**5**) which are also found in the lichen. However, in the current investigation, where we have used HPLC to confirm the presence of aromatic compounds, we have detected one more compound (**6**) in addition to compounds **1**-**5**, which is presumably the hydrolytic product of atranorin **4**. Our current experiments also showed for the first time that both the larvae found in Beragala and the larval waste contained several lichen substances suggesting that the adult butterfly was presumably accumulating the lichen compounds through the larvae. Thus our results unambiguously indicate that the butterfly larvae use the lichen as an alternative food source.

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