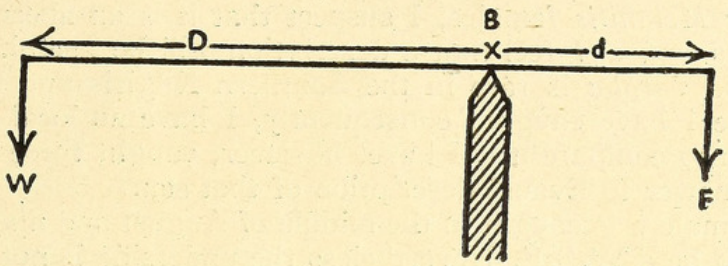
end and a known weight on the other, balance the stick on any convenient object, thus:—



Let B be the point of balance.
„ F be the fish.
„ W be the known weight.
Measure 'D' and 'd'.
Then $W \times D = F \times d$.

e.g., If W = 56 lbs.
D = 39 inches.
d = 21 „
then $56 \times 39 = F \times 21$

$$F = \frac{56 \times 39}{21} = 104 \text{ lbs.}$$

EDINBURGH. A. P. MILLARD.

XV.—SOME INTERESTING BUTTERFLIES.

(*With a coloured plate.*)

1 **Pathysa nomius nomius**, Esperance. ♂ Aberrant (fig. 1.)

Caught at Kallar, Nilgiris, on 19-2-1942 at 1,350′ after a period of normal weather. Expanse: 76 mm.

The main characteristics of this remarkable aberration are as follows: On the forewing, in the cell, bands 2 and 4 are entirely absent; on the upperside there is no spot below band 3, though it is present on the underside. The submarginal spots are enlarged.

On the hindwing, the two bands are narrow, the tornal grey area is absent, and the arrangements of spots and lunules there is unusual.

2. **Pathysa nomius nomius**, Esperance. ♂ Normal (fig. 2.)

Caught at Kallar, Nilgiris, on 20-5-1941 at 1,350′. Given for comparison. Expanse: 80 mm.

3. **Argynnis lathonia issoea**, Doubleday. ♂ Melanistic (fig. 3.)

Caught at Narkanda, Simla Hills, on 19-6-1940 at 9,000′ after a period of normal weather. Expanse: 56 mm.

This specimen seems to be a melanism, an unusual type of aberration among butterflies. The main characteristics are as follows: The whole upperside is of a deep blackish brown, overlaid with golden-brown scales in the basal area and in places along the veins.

Most of the discal area of the under forewing is deep brown but the basal area and along the veins is yellowish. On the under hindwing the lines and patches between the silver spots are blackish-brown and some of the spots are modified. The two large interior spots in 7 are joined.

4. **Argynnis lathonia issoea**, Doubleday. ♂ Typical (fig. 4.)

Caught at Simla in April at 6,500′. Given for comparison. Expanse: 60 mm.

5. **Melanitis phedima varaha**, More. ♀ Aberran? (fig 5.)[1]

Caught at Kallar, Nilgiris, on 14-8-1942 at 1,350′. Expanse: 82 mm.

[1] Further similar specimens since caught point to the possibility of this being a variety of *Zitenius*.

I have been unable to find any satisfactory description of the female of *Phedima varaha*. As this specimen seems to be so different from other *Melanitis* females, I suspect that it is an aberration, but even if it is typical I feel that a description will be useful.

Phedima varaha is rare in the Southern Nilgiris and this is the only female I have caught; consequently, I have no local specimens with which to compare it. I have, however, caught three males and these all answer to Evans' description of that sex.

This female was caught in the middle of August and may be safely assumed to be a W.S.F. Nevertheless the underside is not ocellated, there being only vestigial white spots. The background of both underwings is of a bright ochreous colour with well-marked discal lines.

On the upper forewing there is a well-defined black mark at the end of the cell and beyond it. The costa is ferruginous-ashy, broadening to a brighter ferruginous patch beyond the black mark, which shades into an ill-defined lighter-brown area that reaches the termen. There are no traces of black and white spots in 3 and 4.

Evans gives the measurements of this race as 60 to 70 mm: my four specimens vary from 78 to 82 mm. Kallar, however, from which place three of these come, specialises in 'giants'.

6. Terias hecabe simaluta. More ♂ Albinistic (No fig.).

Caught at Kallar, Nilgiris, on 1-3-1942 at 1,350′. Expanse: 39 mm.

In this specimen all the marginal markings are of a very deep brown, not black, and the disc of both wings is white, very faintly tinged with greenish yellow.

Melanisms and albinisms are easily explained by excess, or lack, of pigmentation. But what are the causes behind such a remarkable sport as No. 1? It would be interesting to have information about any theories that have been advanced to explain such aberrations.

Is No. 1 a new species in the making?

All the figures shown are slightly enlarged.

KETTI (NILGIRIS). M. A. WYNTER-BLYTH, M.A. (*Cantab.*).

XVI.—A NEW VARIETY OF PAPAYA: *CARICA PAPAYA* VAR *FLAVA* FROM TRAVANCORE.

(*With 3 text-figures.*)

In connection with a study of the different sex types of *Carica papaya* we have collected more than one hundred samples of seeds of various varieties of papaya from the different tropical and sub-tropical countries where it is cultivated. Plants have been raised from sixty of these varieties and they are all growing very well (in the Economic Botanist's area in the Agricultural College, Poona), in spite of the great change of climate to which some of them have been subjected. In papaya, classification into varieties have been done on a purely arbitrary basis, so much so, that the same variety is known under different names in different places. However, there are quite unmistakable varieties like the 'Solo papaya', the 'Melon papaya', the 'Washington papaya,' and a few others. Observations