believe that work by Prof. R. A. Fisher has demonstrated mathematically that this extent need be very much less than was previously supposed.

Dr. Collinge's point of view on this question seems to be expressed by his phrase "No one can deny that birds do snap at the wings of butterflies". It is because the imprints known as beak-marks imply something more than merely snapping at wings that for some years attention has been particularly directed to this subject, presumably that which Dr. Collinge mentions as an approach from a new angle. The clear Λ-imprint on the scales means that the wing has been definitely held in the beak but that the butterfly has escaped again. The high proportion of species with 'distasteful' qualities among beak-marked specimens is at present engaging particular attention; it is a very significant fact.

The observation by Mr. T. H. E. Jackson recorded in NATURE[1] deals with selective feeding upon butterflies by a bird to a considerable extent. The black-and-white African wagtail (*Motacilla*) habitually feeds upon butterflies, as shown by observations by Pitman[2], who mentions it daily "consuming dozens of butterflies", Major I. G. Owen in the Sudan[3], and Mr. J. P. Chapin[4], as well as by myself in Uganda[5].

An observation recently received from Mr. C. W. Chorley, an experienced field-naturalist in Uganda, may be quoted here: it is apt because attention has been directed to the lack of evidence of attacks upon migrating butterflies. Mr. Chorley wrote: "Once in Ankole I saw a migration of thousands upon thousands of butterflies [apparently a species of *Glycestha* = *Belenois*] travelling towards the west. The Yellow-fronted Bush Shrike (*Chlorophoneus sulphureipectus* Less.) was very numerous and at the foot of the perches there was quite a collection of butterflies' wings".

Finally, it is a little hard to be criticized for not mentioning a paper on *negative* evidence in a contribution entitled "Further evidence . . .". This was put together from notes hitherto unpublished to aid the provision of evidence which is said to be lacking. A discussion of the whole subject would have necessitated reference not only to the negative evidence but also to much recent positive evidence of which Dr. Collinge is apparently unaware, and would have been a larger undertaking than was attempted.

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Nov. 11.

[1] NATURE, **135**, 194 (Feb. 2, 1935).
[2] Pitman, C. R. L., *J. Bomb. Nat. Hist. Soc.*, **33**, 204 (1948).
[3] Observation 22 of the paper under discussion.
[4] Chapin, J. P., *Natural History*, **22**, 66 (1922).
[5] Carpenter, G. D. H., "Mimicry", p. 69. (Methuen and Co., Ltd., 1933).

Points from Foregoing Letters

Dr. W. T. Astbury summarizes accumulating X-ray evidence for the belief that ultimately there will be found no real distinction between 'fibrous' and 'globular' proteins, and points out that the stoichiometrical data of Bergmann and Niemann indicate the same thing. He shows how X-ray measurements can be used to supplement the Bergmann argument, and calculates a stoichiometrical distribution of amino acid residues and provisional molecular weight for keratin, which also appears to fit into the new scheme.

Dr. F. Levi describes some experiments which confirm certain consequences of C. V. Raman and N. S. Nagendra Nath's first simplified theory of the diffraction of light by ultrasonics at oblique incidence hitherto not experimentally verified.

From measurements of the magnetic susceptibility of nickel, of cobalt and of iron-vanadium alloys (from which the susceptibility of iron can be obtained by extrapolation), Prof. W. Sucksmith and R. R. Pearce calculate the magneton number of these metals. The susceptibility for cobalt was found to be linear between 1,230° and 1,450°, and that of nickel between 500° and 925°. Above 925°, for nickel, the slope of the $1/\chi, T$ curve decreases.

Dr. D. S. Kothari and B. N. Srivasava point out that the heat absorbed or given off when a gas such as helium expands in a vacuum (Joule-Thomson effect) can, under suitable conditions, provide an experimental test to show whether the statistics of Fermi-Dirac or Bose-Einstein are applicable under those conditions. The authors give formulæ from which the magnitude of the effect may be calculated, both for 'degenerate' gases (which deviate from the gas and Van der Waals' laws) and for non-degenerate gases.

A curve showing the absorption of visual purple pigment (of the frog *Rana esculenta*), in solution, is compared by Prof. R. Granit with the 'physiological' absorption. The latter is obtained by calculating the 'effective intensity' from the luminosity curve determined from the response to an electrical stimulus. There is a reasonably good fit of the two curves for the longer wave-length, but for the shorter wave-length the absorption of the visual purple is higher than the 'physiological' absorption.

A diet deficient in vitamin E is found by Dr. B. P. Wiesner and A. L. Bacharach to have a complex disorganizing effect upon the sex organs and sex behaviour of the male rat. The addition of vitamin E to the basal diet does not bring about complete normality and some other factor may therefore be involved.

A single large dose of vitamin D injected in the muscle is found by Dr. H. Rotter to protect rats living on a rachitogenic diet for a long period.

The character and behaviour of a variant of the common jute plant, containing 15 chromosomes in the nucleus instead of the usual 14, are described by Dr. H. K. Nandi. It produces sex cells (gametes) containing seven and eight chromosomes, and breeding experiments indicate that the egg cells with one extra chromosome are more effective in fertilization. The behaviour of the chromosomes during nuclear division, the author states, leads to view that the basic number of chromosomes in the jute is five and that the present usual number, seven, is secondarily balanced.