

NOTE ON THE SYMBOLIZATION OF FLOWER-COLOUR
FACTORS IN PISUM

by

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In recent years the symbolization of flower-colour factors in *Pisum* has been subject to much confusion. In his „Present State” ORLAND WHITE (1917, p. 503, 554—555) listed the two then known factors as *A* and *B*, which symbols had first been used by TSCHERMAK, while LOCK had used *C* and *P*. According to WHITE *A* by itself gives pink while *B* together with *A* gives purple. KAJANUS and BERG (1919, p.4) used the symbols *R* and *G* for the same factors.

In 1920 HANS TEDIN published the results of investigations, showing the existence of three factors, which he called *A*, *B* and *C*. *A* is a fundamental factor for colour giving light-purple by itself; *B* gives pink together with *A*; *C* together with *A* gives violet, while all three together give purple (1920, p. 72). Hence TEDIN's *C* is identical with WHITE's *B* and this led WELLENSIEK (1925, p. 361—362) to retain WHITE's *B* for the purpling factor and to use A_1 and A_2 instead of TEDIN's *A* and *B*. HANS and OLOF TEDIN (1926, p. 104—105), however, pointed out the identity of *A* (WHITE) with *A* (TEDIN 1920) [= A_1 (WELLENSIEK 1925)] and changed the symbols A_1 and A_2 of WELLENSIEK into *A* and A_1 , using *B* for the purpling factor. In a short note WELLENSIEK (1926, p. 359) drew attention to the fact that A_1 [= *A* (TEDIN 1920)] gives light-purple while *A* (WHITE) gives pink, so that these two factors cannot be identical; therefore he retained his A_1 .

A correspondance on the subject between the present authors has led to mutual understanding and to an agreement as to the symboli-

zation of the factors in question. Although the effect of A (TEDIN 1920 and 1926) is not the same as the effect, ascribed by WHITE and others to A (WHITE), it is most probable, that linkage relations established for A (WHITE) are also true for A (TEDIN) and therefore we have agreed to retain the symbol A for the fundamental colour-factor. Thus in symbolizing pure lines, we have to set AB (TEDIN 1920) = A (WHITE), but as symbols for loci in the chromosomes we have A (TEDIN) = A (WHITE). As to the second factor the symbol A_2 has priority over A_r , but since the indication A_2 becomes rather absurd when A_1 is abolished, and because the factor in question has been discovered by HANS TEDIN, we agreed to use the symbol A_r first used by HANS and OLOF TEDIN (1926). Hence:

A : fundamental factor for flower-colour, giving *light-purple* by itself.

A_r : together with A , without B , gives pink.

B : together with A gives violet, together with A and A_r gives purple.

The factor A (WHITE) is considered to be absolutely coupled with a number of other factors (cp. WHITE 1917, p. 505) and this absolute coupling is also true for our A , described above. With regard to this coupling many investigators (e. g. WHITE 1917, p. 505; KAPPERT 1924, p. 2; HANS and OLOF TEDIN 1925, p. 103—104) prefer to consider the assumed coupled factors as in reality only one pleiotropic one, and, if so, our new A is not only the fundamental factor for flower-colour, but also for indenting of seeds, for seed-coat colour, seed-coat-spotting, seed-coat-marbling except the ghost-marbling, for leaf-axil colour and also for violet and red pod-colour (cp. WELLENSIEK 1925, pp. 429, 415).

In accordance with this view the symbols previously used for the factors coupled with A , to wit L_1 , G_c , E , M_1 and C are abolished and in consequence L instead of L_2 and M instead of M_2 may be used for indenting of seed-coat, resp. for marbling of seed-coat. It is true that one of us (WELLENSIEK 1925, p. 429) was inclined to keep the factors, assumed to be absolutely coupled, separate, but since there is every reason to believe in a pleiotropic effect of A , we agreed to use only one symbol.

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