

## 資 料

### REVERSIONS OF WHITE FLOWERS IN *PHARBITIS NIL*

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Several cases of white flowers having different genotypes are known to our genetic literature. The white flowers are recessive to self-coloured, from which they appeared by sporadic mutation in the course of evolution. Since the genes responsible for the white flowers have high constancy, reversion to the normal allelomorph is a very rare occurrence. So far as I know there are only three records of it.

The first was observed by Terao and U<sup>1)</sup> in 1917. The reversion occurred on a white-flowered plant, resulting in a mosaic of white and purple flowers, the latter blooming on coloured stems. The mutated parts became heterozygous for gene self-coloured, including some purple flowers that did not inherit the mutated character. The hereditary purple flowers are supposed to have at least mutated ecto- and meso-histogens (or homogeneous normal), while the non-hereditary purple flowers have only mutated ecto-histogen. In the latter case, however, the stem colour would be green.<sup>2)</sup>

The second case occurred in my own cultures. In 1932, a white-flowered F<sub>2</sub> plant from cross 61-3 × A50 bore intense red flowers on the coloured parts of the otherwise green stems. The red flowers gave 36 coloured and 13 green seedlings in the offspring, whereas the white flowers from the same plant bred true to green seedlings, showing that the mutated parts consisted of normal ecto- and meso-histogens or all normal histogens. Since the coloured area continues down to the base of the main stem, the mutation is believed to have occurred during embryonic ontogeny.

The third case occurred this summer (1934) under Mr. Tabuchi's observation in a white F<sub>2</sub> plant, on which bloomed a flower mosaic in intense blue and white. In the second and third cases, the vegetative reversion in the white flowers is due to the change of gene white-2a to its dominant allelomorph.

The reversional mutation of white flowers to self-coloured being sporadic, its occurrence is very rarely observed. Of the many thousands of white flowers that came under my observation during these twenty years, only one plant was mosaic!

1) Jap. Jour. Genet., 6: 195-198, 1930 (In Japanese)

2) Jour. Coll. Agric., Tokyo Imp. Univ. 12: 479-523, 1934