

marsh would not suit it. The figured vegetation recalls to me rather foreshortened date-palms with branching fruiting stems, showing in addition the cabbage—prized as a vegetable—in the crown of the palm. Sir Flinders Petrie, however, is of opinion that they are “aloes in tubs or vessels around which the leaves hang,” as they are “never represented as springing from the ground.” If so, the tubs must be standing in the watery mud. The stem of the plant (Petrie’s “tub” I take it) shows palm-like growth-rings; and though it does not reach the water or ground, neither do always the “oars,” the birds’ or the ruminants’ feet. The fan-like objects (*tom. cit.* plate xx. 44D) among which the flamingoes are wading, appear to me to represent young palms growing from the nut (which in palms sprouts without necessarily being covered) in or on the edge of the water, as I have seen them throwing up a single leaf on the marshy edge of the river of Hadibu in Sokotra.

The two erections midships on the deck (resembling cabins on paintings of unmistakable boats), each flying its Nome ensign, may be entrance gateways, or perhaps shelters. The gangway between them is invariably situated over the gap in the piles, the discontinuity of which would facilitate landing at the lodge from a reed-bundle float or small boat, or afford a passage-way underneath the lodge. The overhanging branch at one end may serve for shade—perhaps branches with dates for refreshment—just as it does at the look-out end of navigable Nile boats; while the tying-up rope dangles from the stem for the purpose of mooring any visiting boats.

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#### The Supposed Constancy of the Hybrid between the Common and the Water Avens, *Geum urbanum* × *rivale*.

IN several publications issued during the last few years,<sup>1</sup> M. L. Blaringhem has asserted that the hybrid *Geum urbanum* × *rivale*, sometimes described as *Geum intermedium*, retains its character unaltered during subsequent generations, and he cites this plant therefore as an example of the constancy of an interspecific hybrid. In making this assertion M. Blaringhem neglects to take account of the result of experiments carried out by us,<sup>2, 3</sup> which are in direct contradiction to the view he puts forward. We should like therefore to direct attention to the facts observed by us and confirmed by further experiments.

Our observations were made quite independently, and have resulted in the establishment of the fact that a distinct segregation of characters takes place in the  $f_2$  generation of this hybrid. This segregation concerns a considerable number of characters.

1. The *inclination of the peduncle* varies both towards the pendant condition of *G. rivale* and equally towards the erect position of *G. urbanum*.

2. The *presence of anthocyanin* in the peduncle and calyx, which the  $f_1$  generation inherits from the Water Avens, varies considerably in degree in the  $f_2$  generation, and this colouring matter may be almost absent in some specimens.

3. The *calyx*, which is more or less expanded in the  $f_1$  generation, shows this condition in the majority of

<sup>1</sup> Blaringhem, L. Les Problèmes de l'hérédité expérimentale. Paris, Flammarion, 1919. Habilité et fertilité de l'hybride *Geum urbanum* L. × *rivale* L., *Comptes rendus Acad. Sci.* T. 170. Paris, 1920. Nouvelles recherches sur les hybrides, *Comptes rendus de l'Ass. Française pour l'Avanc. des Sciences*, 1922.

<sup>2</sup> Rosén, D. Kreuzungsversuche *G. urbanum* L. × *rivale* L. *Botaniska Notiser*, 1916.

<sup>3</sup> Weiss, F. E. *Geum intermedium* (Ehr) and its segregates. Report Brit. Ass., Dundee, 1912.

cases in the  $f_2$  generation, but some individuals possess the closer calyx of *G. rivale* and others the reflexed calyx of *G. urbanum*.

4. The *colour of the flower* in the  $f_1$  generation partakes of the character of both parents, the petals being yellow on their inner and red on their outer surfaces. In the  $f_2$  generation there is a distinct segregation of yellow colour, about 75 per cent. having this colour and 25 per cent. lacking it, according to the observations of one of us. This proportion agrees with the Mendelian ratio 3 : 1. The red colour varies considerably in degree in  $f_2$ , but scarcely any individual is found to lack this colour entirely. This may be explicable by supposing this colour to be due to several factors.

5. A segregation is also presented by the *form of the petals*. Thus, one of us has shown that in the  $f_2$  generation 49 individuals had notched while 159 had entire petals, figures which approximate very closely the Mendelian ratio of 1 : 3.

6. The *stipules* were observed to show considerable variation in size in the  $f_2$  generation, tending towards those of the respective parents.

It seems curious that, in spite of such obvious segregation to which we have directed attention, M. Blaringhem should still maintain the former but erroneous view that *Geum urbanum* × *rivale* is an example of the constancy of hybrids between different species. This is all the more remarkable as M. Blaringhem admits in his publication of 1922 the occurrence of some variation in this hybrid. We can only imagine that he has not recognised that such variation is due to segregation because some of the characters may be due to two or more factors; so that to obtain completely recessive forms it is necessary to cultivate a very large number of individuals.

As M. Blaringhem's erroneous view of the constancy of hybrid *Geum urbanum* × *rivale* may gain currency among those who are not familiar with the progeny of this plant, it seems desirable to direct attention to the results of the experiments carried out by us prior to the publication of his conclusions.

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#### Fine Structure of X-Ray Absorption Edges.

IN the issue of the *Zeitschrift für Physik* for July 2, 1924, Dr. Coster reports the existence of a white line on the long wave-length side of the absorption edge in the case of the higher valence forms of various elements. Evidence has been obtained in this laboratory that iodic acid and potassium permanganate, two of the substances for which he reports this line, are slowly reduced by X-rays. If this occurs in the absorbing screen, it seems reasonable to expect that the photographic plates will show not only the absorption edge of the original compound, but also that of the reduced portion. According to Lindh's results with phosphorus, sulphur, and chlorine, the absorption edge of the reduced form might be expected to fall on the long wave-length side of the main edge. It seems reasonable, therefore, to raise the question whether the white line Dr. Coster reports may not be the absorption edge of that part of the material in the absorbing screen reduced by the X-ray.

In the effort to discover whether reduction of iodic acid could be demonstrated chemically, we have sealed portions of a 25 per cent. solution of iodic acid in water in thin walled glass test-tubes, with suitable precautions to prevent reduction by the heat of the blast lamp. In one of these tubes of iodic acid we