particularly with regard to the mode of branching. The new hypha emerges from the stump of the old one on which the spore was produced. It grows slowly and occasionally gives off branches which may anastomose with nearby hyphæ. The formation of terminal or intercalary chlamydospores on the mycelium so produced has sometimes been observed.

It is hoped to publish a fuller account elsewhere.

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[1] Thaxter, R., *Proc. Amer. Acad. Arts Sci.*, **57**, 291 (1922).

A Polyhaploid Plant of *Solanum polytrichon* Rydb.

S. polytrichon Rydb. and *S. stoloniferum* Schlechtd. are two related tetraploid species, $2n = 48$, in the Longipedicellata group of tuberous *Solanums*. Using the former as female parent, Dodds (unpublished work) obtained a good seed set in a cross between them; but only one seed germinated. This plant had the chromosome number $2n = 24$, suggesting that it might be a polyhaploid of *S. polytrichon*, having arisen by haploid parthenogenesis. The plant was chlorotic and this fact is evidence in support of a parthenogenetic origin, as the parental plant of *S. polytrichon* (Commonwealth Potato Collection No. 2330.1) used was known to be heterozygous for a single recessive gene for chlorosis (Dodds, unpublished work). The polyhaploid was also smaller and slower growing than the normal plant. Table 1 shows the terminal leaflet index and stomatal length of the polyhaploid compared with those of *S. polytrichon* (C.P.C. 2330.1) and its normal and chlorotic segregates. A least-squares analysis of the data in Table 1 showed the reduction in both the leaflet index and stomatal length of the polyhaploid to be significant, and to be a direct consequence of the halved chromosome number and not of the fact that the plant was chlorotic. Similar reductions in leaf index and stomatal length were observed in polyhaploid *S. demissum* Lindl. by Howard and Swaminathan[1], and also in the 24-chromosome plant, supposedly haploid, from the cross *S. chaucha* $2n = 36 \times$ *S. tuberosum* $2n = 48$, Lamm[2]. Narrow leaflets (low leaf index) seem to be a valuable morphological character for distinguishing *Solanum* polyhaploids.

Table 1

Material		Chromosome number, $2n =$	Mean terminal leaflet index ± S.Em.	Mean stomatal length* ± S.Em.	Habit
S. polytrichon C.P.C. 2330.1		48	82·0±1·57	23·7 ±0·32	
Segregates of *S. polytrichon* C.P.C. 2330.1	1	48	82·7±1·39	20·9 ±0·47	Normal
	2	48	90·0±1·49	21·3 ±0·37	
	3	48	87·3±2·53	22·5 ±0·42	
	4	48	86·3±2·99	21·4 ±0·37	Chlorotic
	5	48	94·4±1·85	21·4 ±0·30	
	6	48	92·1±3·07	19·4 ±0·35	
	7	48	91·5±1·67	20·4 ±0·30	
Polyhaploid *S. polytrichon*		24	76·8±1·44	15·72±0·31	

* In micrometer eyepiece units; 1 unit = 1·4 μ.

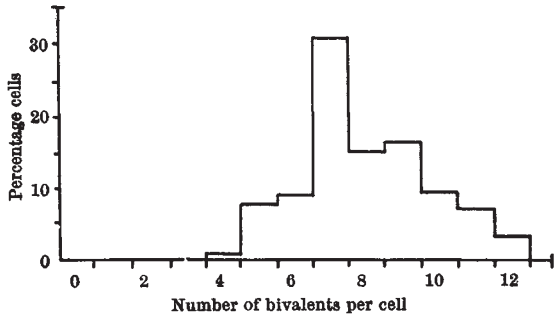

Fig. 1. Bivalents per cell in polyhaploid *S. polytrichon*

At meiosis in *S. polytrichon* (C.P.C. 2330.1), 24 bivalents are regularly produced, whereas in the polyhaploid there is a considerable reduction in bivalent formation. In an analysis of seventy-four cells at metaphase I, the mean number of bivalents was 7·9 ± 0·55. The range and frequency of bivalents per cell are shown in Fig. 1.

This behaviour contrasts with that in normal diploid *Solanums*, where complete pairing is invariably the rule. Also in the haploid *S. tuberosum* L. studied by Ivanovskaja[3], eleven to twelve bivalents were formed, while the 24-chromosome plant reported by Lamm[2] showed almost complete pairing at meiosis.

Reduction in bivalent frequency per cell has been shown to be a reliable indication of genomic differentiation in polyhaploid *S. demissum* (Marks[4]). Consequently, it is also reasonable to interpret the reduced bivalent frequency in polyhaploid *S. polytrichon* as indicating differences between its two sets of twelve chromosomes. This implies that *S. polytrichon* itself is essentially allotetraploid. A similar conclusion has been reached by Swaminathan[5] for other species in the group Longipedicellata. The polyhaploid rarely comes to full flower, and even then it is completely sterile. It produces tubers quite readily.

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[1] Howard, H. W., and Swaminathan, M. S., *Genetica*, **26**, 281 (1953).
[2] Lamm, R., *Hereditas*, **24**, 391 (1938).
[3] Ivanovskaja, E. V., *C.R. (Doklady) Acad. Sci., U.R.S.S.*, **24**, 517 (1939).
[4] Marks, G. E., *J. Genet.* (in the press).
[5] Swaminathan, M. S., and Howard, H. W., *Bibliographica Genetica*, **16**, 1 (1953).

Heterogeneity of Date Fruits

WHEN I was washing a population of date fruits collected from one and the same palm tree, variety "Hayyani", I noticed that some fruits floated to the surface of the water while others sank to the bottom of the vessel. I then analysed samples of both floating and sunken fruits and found much smaller sugar content in the former than in the latter. It was therefore thought advisable to investigate the possibility of floating such fruits in water and also in aqueous solutions of sodium chloride as a criterion for segregation of such population into more or less homogeneous batches with regard to their sugar con-