August 4, 1942

My dear Henry,

Thanks for sending me the last news of this years catches in Dominula. I think, as you say, the total numbers must be considerably less than what we are used to, as they were certainly less abundant each day, and I fancy that, in the end, the

were not so very much prolonged.

I am sending with this the bi-monthly survey of selection lines, as they appeared on August 1st. As you see, we shall be replacing mating 13 of last December, which has given us some very good mice, by a really superb pair which I have marked as mating +18. The extremely high tail lengths, 59 mm for the female and 65 for the male, of course owe a good deal to the rapid growth, normal in May and June litters, and probably to large individual growth also; but last December we were choosing from material born after September 2nd, and could only get 54 and 53 for the two chosen tail lengths. In the negative line also only one mating, -14, is due to cease, and we have put up a 19 mating, using two greys as I want to keep the proportion of brown from increasing.

You may recall that in the outcross, generation A_2, the first pair to breed gave a rather mediocre showing, with tail lengths from 32 to 50; but the other pair, also giving four

heterozygotes in the first litter, ran from 60 to 62. Both these matings have since had a second and a third litter, and we should be measuring the ~~third~~ second litters almost at once. In the third litter of the ~~second~~ first mating, i.e., the mating with not very plus tails, one homozygote out of 10 was recorded, and this was living, looking quite a little mouse, at 5 days old. You might let Tucker know this, so far as it goes.

Let me have the sheet back, as I plan some compilations from ~~xxx~~ them

Yours sincerely,

P.S. I visited Merton the other day to score Mather's 16 families from Short parents, which are parallel with my 12 from Mids. The expectation for his material is 4 nulliplex, giving, apart from Shorts, 100% Long; 8 simplex, giving 50%, and 4 duplex, giving about 20%. His families are much ahead of mine, so that we could score a half to three-quarters of all the plants. The results confirmed expectation qualitatively, with some quantitative disturbance which, as I have had very regular ratios in Lythrum hitherto, puzzles me somewhat. His families can be classified as 1 nulliplex, 11 simplex, 4 duplex. The nulliplex had a single Mid plant, presumably due to illegitimate fertilization, or stray pollen. Both the other classes show an excess of Mids relative to expectation, so that the most extreme family classed as simplex had actually 19 Longs to 38 Mids. The only plausible supposition I can make at present is that this year, unlike previous experience, Mids have flowered considerably before Longs. In my garden 12 Mids and 20 Longs last year gave the same mean date of flowering within

(Enclosure)

a day. The same plants this year have differed on the average by about 10 days. How great an effect this might have on the ratios determined at an intermediate count is shown by the fact that my first five or six plants out this year were all Mids, whereas last year I should have got a nearly correct ratio by counts made at any time. In my Harpenden material I shall, of course, only have simplex and duplex families, with expectations of 8 and 4. I have only scored a little more than 100 plants in all yet, so that only a few families have classified themselves. I think I can score another 100 or so to-morrow.

What proves the polyploid hypothesis is that all of Mather's families, even those showing a great excess of Mids, have also given a sprinkling of Long plants. All of these would have to be regarded as coming from the wrong seed parent if the inheritance were diploid. If the ratios recover their balance later in the year, these duplex families should give an indication, without much certainty this year, of whether the thing is tetraploid or hexaploid.

R.A.F.