

### 3. Effects of "converter" on an intermediate allele and on a variegated allele of B.

The conversion-type phenomenon reported last year considered the effects of  $B^1$  on  $B$  and  $b$  only. Two additional alleles,  $B^V$  (Singleton, Newsletter 23:5), which is  $b$ -like but mutable, and  $B^b$  (an apparent allele, not yet firmly established), which brings about strong pigment production only in the glume bar, have been tested against  $B^1$ .  $B^V$  is tractable, while  $B^b$  is not. For  $B^b$ , comparisons were made between  $+B^1+$  and  $+B+$  over  $gl\ B^b\ sk$ , selfed and crossed to  $gl\ B\ sk$ . In selfs  $B^b$  and  $B^1$  are indistinguishable, since both elicit strong glume bar color but weak husk and sheath color. The cross to  $gl\ B\ sk$  gave the following:

Markers Grade	+ +				gl sk					+ sk					gl +					Sum	
	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3		4
B <sup>1</sup> test	6	7	1						9	6			1	1	1		1	2			35
B check				3	1				1					2						3	10

The  $B^1$  class ( $+ +$ ) was weak (the newly-introduced  $B$  has been affected), while the  $B^b$  class ( $gl\ sk$ ) was not. In the  $B$  check, though the numbers are small, the grades were all of the intense level, as expected.

For  $B^V$ , comparisons were made between  $+B^1$  and  $+B$  over  $gl\ B^V$ , selfed and crossed to  $gl\ B$ . In this case segregation for  $Pl-pl$  was present and although the analysis was complicated because of previous inexperience with  $Pl$  in this system, the results were even more striking in  $Pl$  plants. Only the  $Pl$  individuals are presented below, for simplicity. Variegated plants in the selfs were graded according to the color level of sectors, with the following results:

Marker Grade	+							gl							Sum					
	Varieg.				Uniform			Varieg.				Uniform								
	1	2	6	7	0	1	2	5	6	7	1	2	6	7	0	1	5	6	7	
B <sup>1</sup> test	2	1			16	35	4				8	3			3					73
B check			2	0				3	6	12		4	1						2	30

Note that at least two grade levels separate intense and weak individuals in each case. The cross to  $gl\ B$  gave the following:

Marker Grade	+							gl							Sum		
	0	1	2	3	4	5	6	7	0	1	2	3	4	5		6	7
B <sup>1</sup> test			2	11	7					1	4	12	4				41
B check						1	1	12					1	0	6	2	23

It is interesting that the functionally intermediate allele  $B^b$  is like the null  $b$  in its response to  $B^1$ , while the functionally null allele (except after mutation),  $B^V$ , is affected by  $B^1$  and is thus similar to  $B$ .

-- E. H. Coe, Jr.

### 4. Effects of $c_2$

This factor is still unlinked. TB-3 tests (long arm) were negative. In combinations with intensifier, a new effect has been found: Selfs of confirmed  $c_2\ c_2$  in in segregate 3 colorless:1 dilute, while