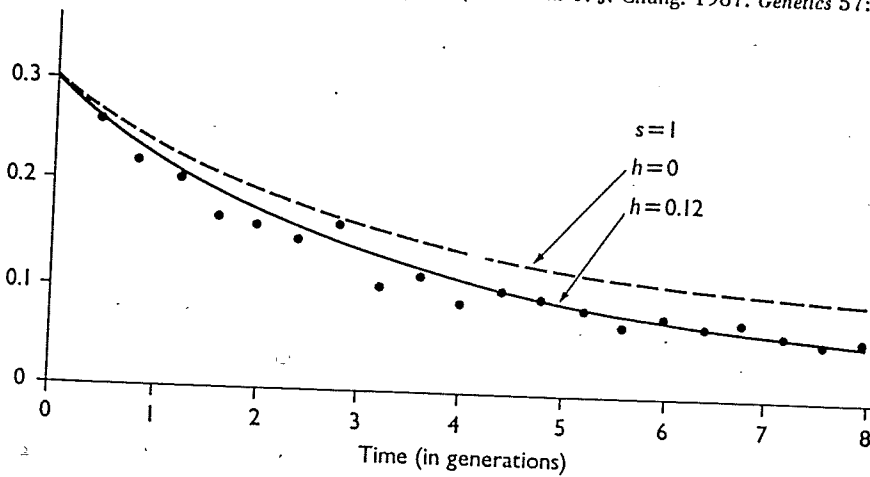


Table II-6. Time needed to make various changes of gene frequency in the case of a recessive lethal.

From	To	Time (generations)
0.5	0.1	8
0.1	0.01	90
0.01	0.001	900
0.001	0.0001	9000
0.0001	0.00001	90000

FIGURE 4-3. The effect of selection on an allele that produces stubble bristles when heterozygous and is lethal when homozygous. The ordinate is the frequency of the *Sb* allele in adult flies. The dashed line is the expectation when there is no selection against heterozygotes; the solid line represents the 12 percent selective disadvantage of heterozygotes. (Data from Y. J. Chung, 1967. *Genetics* 57:957.)



$W_{AA}$     $W_{Aa}$     $W_{aa}$   
 ↓  
 $1-hs$     $0 \rightarrow 1-s \Rightarrow s=1$   
 ↓  
 $1-h$

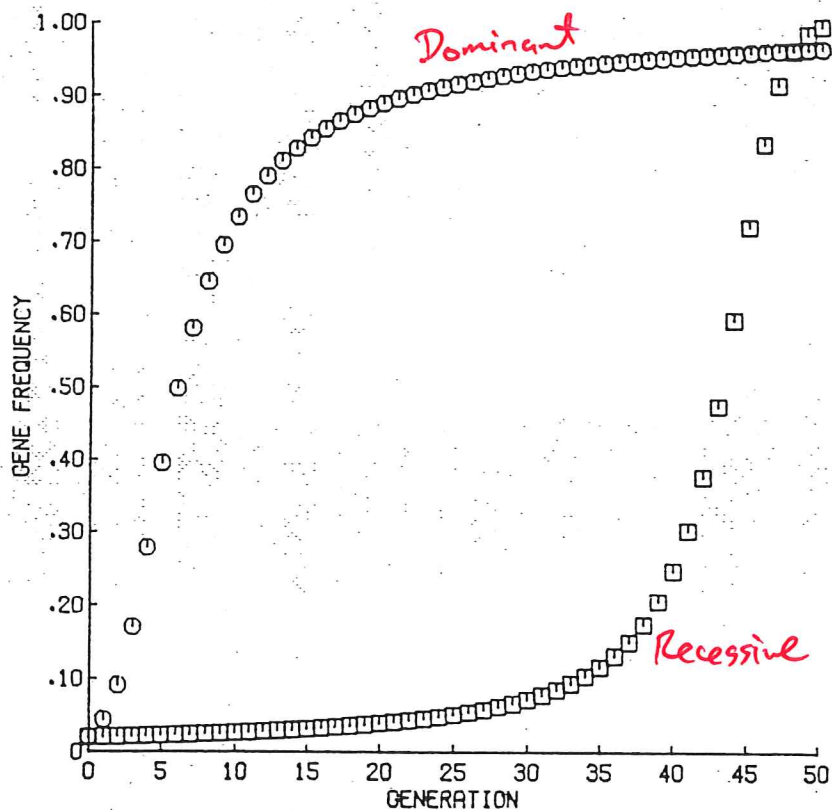


Figure II-3. The course of gene frequency change over 50 generations when fitnesses of  $AA$ ,  $Aa$ , and  $aa$  are 2.3 : 2.3 : 1 (circles) and 2.3 : 1 : 1 (squares). Initial frequency of  $A$  is 0.02.

Table II-7. Times required to change through various gene frequency ranges when  $s = 0.01$ .

From	To	Favored allele is:		
		Dominant	Multiplicative	Recessive
0.001	0.01	232.07	231.32	90,231.2
0.01	0.1	249.89	240.99	9,239.79
0.1	0.5	308.61	220.82	1,019.72
0.5	0.9	1,019.72	220.82	308.61
0.9	0.99	9,239.79	240.99	249.89
0.99	0.999	90,231.2	231.32	232.07

This table shows times for only one value of  $s$ , 0.01, but from it we can easily find the times for other values of  $s$ . The approximation formulas (II-94) and (II-97) show an inverse relationship between  $s$  and  $t$ .

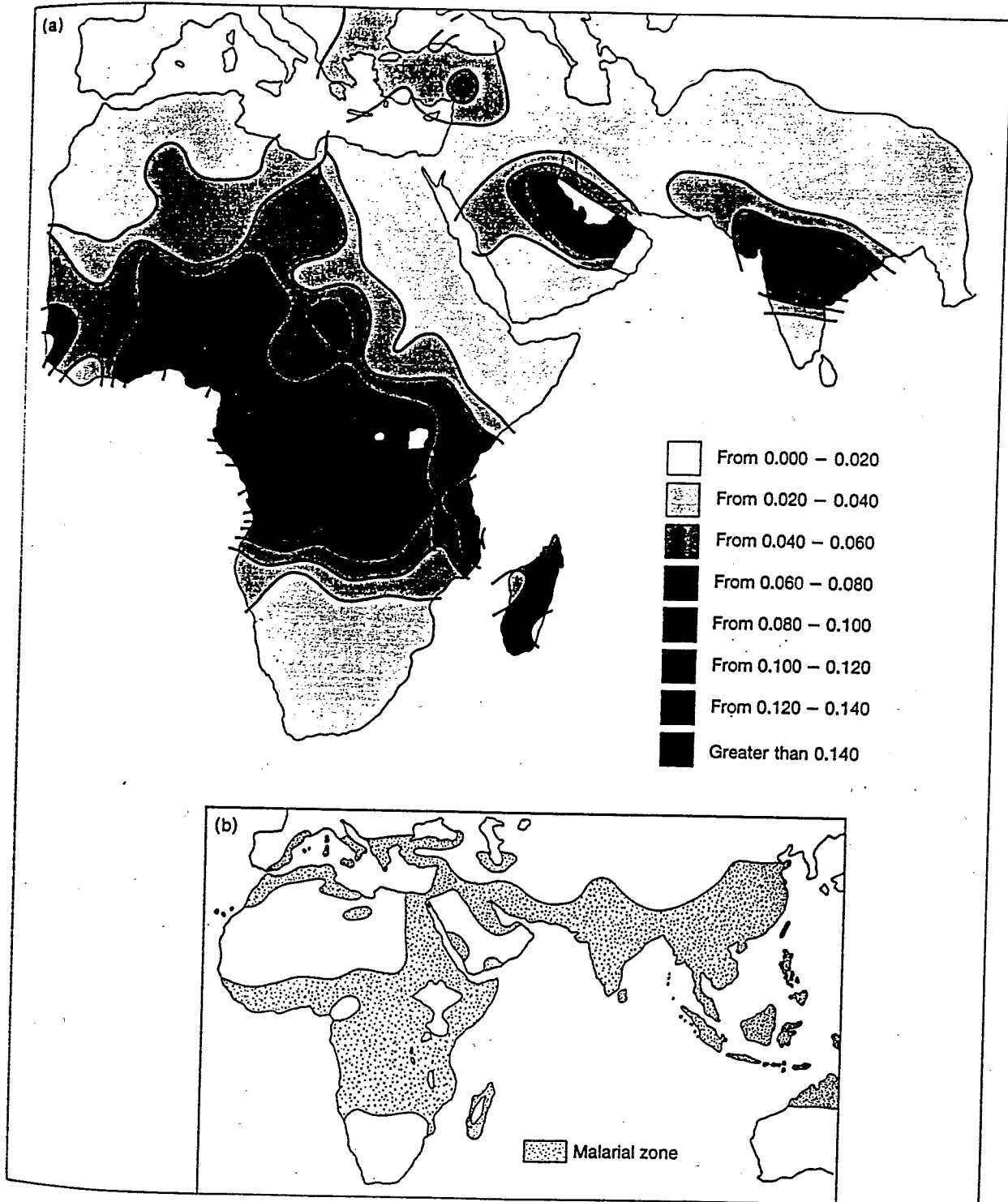


Figure 5.8 (a) Frequencies of gene for sickle-cell hemoglobin in Africa, southern Asia, and Europe. The frequencies match the incidence of malaria (b).