SEX RATIOS IN DIFFERENT POPULATIONS

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CHAIRMAN’S INTRODUCTION

By way of introduction to this afternoon’s papers I think it might just be worth mentioning my own connection with the problem of the genetics of the sex ratio.

Years ago, during the war, I was in a hospital which handled very large numbers of neurotic soldiers. I collected the family histories of about 1000 of these soldiers. They came from sibships of all sizes. There were some in which the preponderance was very much to one side or the other, male or female; but were there more male-preponderant and female-preponderant families than chance would account for?

I wrote to R. A. Fisher and asked him for his advice. As always, he was helpful, and he suggested the following method of estimating preponderance, valid for sibships of all sizes, and capable of yielding a summation of preponderances. This was to count in every sibship, say of \(m\) males and \(f\) females, the number of same-sexed pairs against the number of opposite-sexed pairs, i.e. \(m(m-1) + f(f-1)\) as against \(2mf\). The results, though correct, do look odd; thus in a sibship of three males and one female there are six same-sexed pairs and six opposite-sexed pairs, i.e. no preponderance.

I followed Fisher’s method, and it did appear that there was a little more sex-preponderance than might have been expected by chance. However, I made no allowance for the excessive weight given to large sibships; and in testing significance I used the numbers of pairs, instead of scaling them down to the number of persons observed. The test of significance was, in fact, phoney. Strangely enough, Fisher accepted my paper, and it was duly published.

Years later a stranger came up to me at an International Congress of Genetics, identified me as the author of this horror, and confronted me with all its enormity. It seemed that, for all of 10 years, he had waited to catch up with me for this purpose. I confessed that, alas, I knew it all already; and there was nothing to do but agree that there are things that one can never live down.

However, personal reminiscence is keeping us from the business of the afternoon. I will begin by asking Dr Edwards to give us his paper on the search for genetic variability of the sex ratio. Dr Edwards is a mathematical geneticist working at Cambridge.