ISTITUTO SIEROTERAPICO MILANESE

"SERAFINO BELFANTI"

ENTE MORALE AGGREGATO ALLA UNIVERSITÀ DI MILANO

MILANO - VIA DARWIN, 20

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Direzione Scientifica

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My dear Professor,

I thought you plahhed to spend a winter in India, but I see from your letter that you are in England. I hope the weather has not been as horrible as the one we have had during all December.

I am enclosing a translation of the letter written to you by Dr. Previtera, and returning the original. I do not know him personally, and have been first in touch with him only recently, as he has just enrolled in the Biometric Society. He asked my opinion on his plan of translating your "Design of Experiments" and I suggested to him to contact you before starting the translation, as there might be other people who offered to do so before him. I have also proposed that he possibly keeps to a standardized list of translations into Italian of words such as "randomization" for which there is no satisfactory translation at present. Such translations might be agreed upon at a meeting of the Biometric Society, which we hope to hold here shortly; it would be important to reach the agreement of a number of biometricians on such a matter.

Bliss wrote me to ask about the possibility of holding the 1953 conference of Biometry in Italy. One proposal which I have made is that it might take place in Bellagio, where the IX International Genetics Congress is going to be, and shortly after it. This would ensure the participation of a number of geneticists ~~xx~~ I understand that this is in the wishes of the Society - and also reduce organization expenses, because full use could be made of the ~~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~ setup of

the Genetics Congress. The funds collected for the conference could thus be used mainly for paying travelling expenses. Linder has approved this idea. The only disadvantage is of course that after one week at Bellagio, geneticists may wish to go elsewhere for a change. On the other hand, there is a number of pleasant excursions from Bellagio.

Work is progressing slowly. Chloromycetin is finished since six months or more and a manuscript drafted ; it is now being copied and we shall let you have it soon. I have since been busy with maps and similar problems. I have obtained strains complementary for sugar fermentations by the following scheme : a TLB_1- strain was crossed to a BM-S^r (streptomycin resistant) on minimal + streptomycin + T (threonine) + L (leucine) + B_1 (Thiamin). Thus, recombinants of phenotype TLB_1-S^r were obtained with a variety of combinations of sugar characters (the two original strains differed for sugar fermentations as well). Independently a cross BM- x TLB_1- (differing for sugars) was made on minimal, and prototrophs with vatious sugar combinations recovered. The filial prototrophs were crossed to filial TLB_1-S^r on minimal plus streptomycin, using strains complementary for five sugars. I have made only three of the possible thirty two complementary crosses, but they already show that a chromosome abnormality is segregating and the three crosses are not comparable. I have then followed another way. From a standard BM- strain, and from a derivative of it carrying five sugar deficiencies I have prepared two mutants : a prototroph, BM+, and a streptomycin resistant, BM-S^r. A BM-S^r can be crossed to a BM+ on minimal plus streptomycin. Thus two crosses are possible : BM-S^r sugars negative x BM+ sugars positive and BM-S^r sugars positive x BM+ sugars negative. If there are no differential viabilities, this might be enough. It was found that one of the two crosses gave a fairly decent linear order ; the other did too, but two genes seemed exchanged ! Chromosome mutations may be really too frequent in bacteria, even following

UV treatment which was the only mutagenic treatment used to produce the strains. Perhaps we have to do without UV . One unexpected fact was that when the same scheme was used, starting from TLB_1- stocks, no crossing was fertile. It seems that in the building of TLB_1- strain (by X-rays) Lederberg has introduced a mutation for fertility. This mutation has the following effects; self-sterility and cross-fertility with all other K-12 strains, as well as with all filial strains carrying the same TLB_1- markers. It is to be agreed that K-12 is homothallic; it seems therefore that TLB_1- has mutated to some sort of heterothallism (lost after recombination ?) . Of course, this interpretation would need the finding of the opposite mating type. On the other hand which other name could one give to this type of incompatibility?

The family is all right, except of course that with three children , the chance of having at least one ill at bed at any time is rather high. My wife sends her best greetings. With best wishes for 1952,

Yours sincerely

Luca.