Table 2. Days necessary to detect bacilli. Fifty-six sputa were examined by each cultural method.

Cultural method	Positive sputa (No.)	Avg. No. of days for growth
Medium No. 1 and No. 2	30	2.5
ATS medium	23	31.1

patients suspected of having pulmonary tuberculosis but in whom the sputa were reported as being negative with the Ziehl-Neelsen technique. As parallel and as control cultures, American Trudeau Society medium (ATS) was used as described by Willis and Cummings (*1*).

It is to be noted that 22 of the sputa cultivated were positive in all media employed. Twenty-five sputa were negative in all media used. Eight sputa were positive in medium 1 or 2, and one sputum was positive in ATS medium but not in medium 1 or 2. In the cultures that were positive, growth of acid-fast bacilli was detected in an average of 2.5 days when medium 1 or 2 was employed, while an average of 31.1 days was required for the detection of growth in the ATS medium.

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Reference

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Desynaptic Pseudoassociations in Secale montanum

Unusual meiotic chromosome associations were observed at diakinesis in an experimental plant of the grass, *Secale montanum* Guss. The plant was obtained by pollinating an Iranian strain of *S. montanum* with x-rayed pollen of the same strain. Observations were limited, for the plant was accidentally destroyed after a single fixation of pollen mother cell materials had been collected. Nevertheless, it is felt that the observations should be recorded.

The plant proved to be heterozygous for an induced reciprocal translocation, but more striking were the peculiar chromosome associations at diakinesis (Fig. 1*A*). These unusual bivalents and translocation configurations involved homologous chromosomes that lay side by side, paired along their entire lengths through late diakinesis, yet connected only at their very ends. The connections, which were simply strands of matrix rather than true chiasmata, were always terminal and connected only corresponding regions of the homologous chromosomes. As is shown in this report, these matrical strands were not effective in maintaining the associations in metaphase I.

Similar meiotic configurations have been designated as "quasibivalents" (*1*), "pseudobivalents" (*2*), and as "*s-s* associations" (*3*). In terminology, I follow Walters, who uses the original term *pseudobivalent* to describe ". . . configurations which have a bivalent-like appearance, but which are not formed by chiasmata" (*2*). However, a more general term, *pseudoassociation,* must be proposed to include the translocation configurations recorded here. Under this terminology, matrical strands that connect the chromosomes are called "pseudochiasmata."

Individual pollen mother cells exhibited both normal and pseudoassociations. An estimated 80 percent of the diakinesis cells contained one or more pseudoassociations. Only six diakinesis cells could be completely analyzed, however. Of the six cells, two showed $5_{II_n} + 1_{IV_n}$, two showed $1_{II_n} + 4_{II_p} + 1_{IV_p}$ (Fig. 1*A*), and two cells showed $5_{II_p} + 1_{IV_n}$ (n is normal association and p is pseudoassociation). No univalents were observed at diakinesis, but one or more was found in 94 percent of the first metaphase cells. Apparently desynapsis of the diakinesis pseudoassociations was the source of metaphase I univalents. At metaphase I, the univalents moved to the poles ahead of chromosomes of normal configurations (Fig. 1*B*). Early movement of univalents toward the poles was indicated by the fact that only four lagging chromosomes were seen in 83 anaphase I cells, although first metaphase cells contained an average of 3.7 univalents per cell. About 20 percent of the anaphase I cells showed unequal chromosome distribution. Further stages of meiosis appeared rather normal. Only two out of 54 anaphase II cells contained laggards, and only 7.8 percent of the microspores contained micronuclei.

That the pseudochiasmata were, indeed, matrix strands rather than true chiasmata was suggested, not only by their appearance, but also by the following considerations. Desynapsis showed the terminal connections to be ineffective in maintaining pseudoassociations through the first metaphase of meiosis. If the connections were true chiasmata, it would be difficult to explain their consistent terminal location. It is unlikely that chiasmata would originate only at the chromosome ends. Neither could the terminal position of the strands be explained as products of terminalization, for the chromosomes did not open out as do normal bivalents.

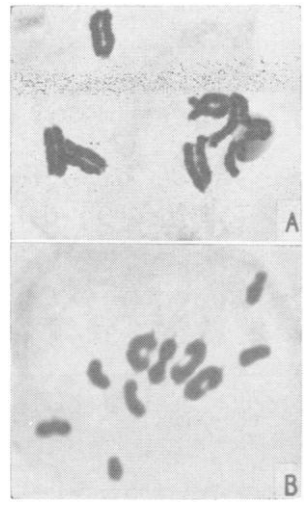

Fig. 1. (*A*) Diakinesis, one normal bivalent, four pseudobivalents, and one pseudotranslocation association of four chromosomes; (*B*) Metaphase I, four bivalents and six univalents.

The pseudoassociations showed interesting deviations from the usual meiotic chromosome behavior. Homologous chromosomes ordinarily synapse along their entire lengths in zygotene and pachytene. In diplotene and diakinesis they separate along most of their lengths but remain connected at chiasmata. Resulting configurations have led to the conclusion that homologs repel each other after pachytene and that they are held together only by chiasmata thereafter (*4*). In diakinesis, the chromosomes of pseudoassociations remained paired along their entire lengths and gave no suggestion of repulsion. Furthermore, the unusual side-by-side association was maintained through late diakinesis without benefit of chiasmata. The terminal strands of matrix could not explain the side-by-side association, for strands were present only at the distal ends of the chromosome arms. Apparently the chromosomes remained paired only through some sort of mutual attraction.

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New Type of APC Virus from Epidemic Keratoconjunctivitis

Epidemic keratoconjunctivitis (EKC) is an eye infection with sharply defined clinical characteristics, especially the development of round subepithelial corneal