

BIOLOGY

Find Extra Chromosome

The discovery of a supernumerary chromosome in man may have solved the puzzle of why some persons have been found to have 48 chromosomes while others have 47 or 46.

► THE DISCOVERY of an extra chromosome in some males may have solved the problem of just how many chromosomes man has.

Scientists have found men with 48, 47 and 46 of these tiny bodies that are associated with genes and heredity. This was a puzzle because each species of plant and animal is supposed to have one constant number of chromosomes.

Now, however, all three numbers seem to be right for the species *Homo Sapiens*.

There is evidence, reported in *Science* (June 6), that the presence, either singly or in duplicate, or absence of a "supernumerary chromosome," or extra one, determines the total.

Working with tissue from 15 Japanese and eight American whites, Dr. Masuo

Kodani of the State University of Iowa reports finding the extra chromosome in both groups. Nine Japanese had 46 chromosomes, including the paired sex chromosomes, "X" and "Y", and 22 like chromosome pairs.

One individual always had 47. Examination revealed a single small chromosome in addition to the 46 found in the nine other Japanese studied.

In the remaining five Japanese, 48 chromosomes were found. In each of these one of the chromosome pairs was identical to the single extra chromosome.

Earlier reports had accounted for the discrepancy between the "classical" total of 48 and the more recent finding of 47 chromosomes by saying the Y-chromosome does not exist in man and that the total

number of chromosomes in the male is 47.

Apparently, Dr. Kodani reports, the "differentiating factor is the chromosome which occurs singly in some individuals but as a duplicate in others. This chromosome appears to be a supernumerary chromosome."

While none of the eight whites studied included a 47-chromosome individual, Dr. Kodani believes there is little doubt such individuals exist in this human ethnic group.

There was no evidence, Dr. Kodani reports, that the extra chromosome was produced by the breaking up of either a sex chromosome or any other. The number of cases reported of the varying chromosome numbers is still too small, Dr. Kodani concludes, to provide reliable estimates of the frequencies of the different numbers for the Japanese and white groups.

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HORTICULTURE

Cutting Roses Can Help Or Hinder Their Growth

► HOW YOU CUT the roses from the bush can be very important in determining how long the bush, and the bouquet, last.

First of all, the U. S. Department of Agriculture warns, use a sharp knife or pair of scissors when you do cut. Breaking or twisting off flowers injures the wood.

Timing the cutting is also very important. During the first season of bloom the flowers should be cut with very short stems only. In fact, if no early flowers are cut, the rose plant will probably develop into a large bush by fall when some flowers may be cut.

At least two leaves should remain on the stem between the cut and the main stem. With tea roses, make the cut just above the topmost spray of five leaflets; if the stem is as thick as a pencil, the cut may be made above a higher three-leaflet spray.

When its petals fall the rose should be removed from the bush.

For cut flowers, choose roses that have just begun to unfold. They will also keep better if they are cut in the late afternoon.

Flowers that have begun to wilt prematurely indoors can be revived if action is taken quickly. The USDA flower experts recommend making a slanting cut approximately an inch up from the stem end and placing the stems in very hot water for a few minutes. Boiling water removed from the stove for a few minutes is about the right temperature. Follow this by plunging the stems quickly into cold water.

The hot water drives off any air bubbles that may form in the water-conducting tissues of the stem. Then the cold water can rise and revive the flower. Flowers that have been wilted for several hours will not be helped this way, however.

A USDA Home and Garden Bulletin, No. 25, *Roses for the Home*, contains many useful tips on the care and growing of roses. Single copies are available free from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

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LOW-NOISE AMPLIFIER—A new low-noise ultra-high frequency and microwave amplifier now under development at Bell Telephone Laboratories uses special semiconductor diodes. M. Uenohara mounts a diode in a waveguide structure for checking its amplifying properties.