

somewhat higher than the simplest of unicellular forms the reproductive method is slightly different. The products of cell division are dissimilar, certain daughter cells being specialized for reproductive purposes. These reproductive cells are called *spores*, and in cases where they are similar one to the others, the method of reproduction is known as the *Asexual method*. In forms still higher, some algae, for example, another method of reproduction is suggested. The spores produced are similar in appearance, but do not develop directly into new individuals. They first unite in pairs, forming in each case of union, a *zygote*, which develops into an adult individual. This method of reproduction is known as the *Sexual method*, and where the uniting cells are similar the fusing process is known as *Conjugation* or *Isogamy*. In other forms the fusing cells are dissimilar, in which case the type of sexual reproduction employed is termed *Heterogamy*. In such cases the gametangia (organs bearing the gametes) are also differentiated.

Mr. Tully referred especially to *Ulothrix*, an organism which bears two kinds of spores. One kind has two cilia on each spore, the other kind has four. The smaller two-ciliated spores unite in pairs, resulting in the development of a new filament. The speaker believed these similar gametes to be the beginning of the sexes.

These methods were illustrated by microscopic specimens, those of *Spirogyra* and *Vaucheria* being especially fine.

Mr. Tully then briefly described a method of preparing microscopic sections. Hard stems are first soaked in a mixture of glycerine, plus 95 per cent. alcohol, to soften the tissue for sectioning; tender stems are soaked in water and softer plant tissue, such as leaves, in a mixture of chromic acid, plus glacial acetic acid, plus water. The specimen is then cut with a microtome and the sections dropped into a little wire gauze basket, which may be immersed with the sections into the stain. The stains used are *methyl violet*, which brings out the ligneous tissues, and *congo red*, which colors the softer tissues. *Eosin* may also be used for the softer parts. After staining the sections are washed in water and then in alcohol. This method was beautifully illustrated by some sections of stems taken from Mr. Tulley's own collection.

Dr. Malte then said a few words on fixing and staining vegetable tissue. He referred to the fact that nuclei in life are irregular in shape, having ramifications which extend not only to the cell wall, but pass through it, thus establishing direct communication between the cell and its neighbors. Dr. Malte suggested the possibility of these nuclear ramifications being responsible for the conveyance of stimuli which pass from one