## A Triploid Asynaptic *Allium amplectens* from California

TRIPLOID forms of the Californian species *Allium amplectens* Torr. ($2n = 21$) are characterized by almost absolute lack of chiasmata at meiosis. In some slides no chiasmata at all occur, in other slides there may be found 1 chiasma in about 500 pollen mother-cells.

The pachytene chromosomes are paired in the manner normal for triploid species and no structural differences between homologous chromosomes are observed. Homologous chromosomes are held together during diplotene exclusively by the relational coiling.

The 21 univalents present at the first metaphase are arranged in an equatorial plate. Their centromeres remain undivided and all the chromosomes are included in one interkinese nucleus.

The second division takes place regularly and leads to the formation of pollen dyads. Almost all the pollen grains investigated exhibit 21 chromosomes, showing the regularity in function of this meiotic abnormality.

Tetraploid forms, collected at the same locality as the triploids, have normal chiasma conditions, and their meiosis runs a regular course. The pollen grains are formed in tetrads and contain ± 14 chromosomes.

The asynapsis of *Allium amplectens* is evidently genetically caused, and is not due to failure of pairing. It is of a more extreme type than the asynapsis earlier reported from *Zea*[1] and *Crepis*[2].

ALBERT LEVAN

Hilleshög Beet Breeding Station
Swedish Sugar Company,
Landskrona, Sweden.

[1] Beadle, *Cytologia*, **3** (1932).
[2] Richardson, *J. Genetics*, **31** (1935).

## Effects of Injury on the Teeth of *Selachii*

IN 1784 Andre[1] attempted to prove "succession" of teeth in cartilaginous fishes, illustrating his paper by a picture of a vertical row of divided teeth at the site of a spine embedded in the jaw of *Galeocerdo*. He contended that the abnormal teeth had developed subsequent to the injury.

Last year, Dr. E. W. Gudger[2] reported similar splitting of teeth and one in which five corresponding teeth had been severed where they overlap those of adjacent rows in *Caracharhinus limbatus*. He also attributed the abnormality to disturbances in the tooth germ.

When considered together, the two halves of the split teeth correspond in every particular to normal teeth, except that the edges may have been smoothed off subsequent to the injuries received.

Whilst extracting individual teeth from the jaws of *Caracharhinus*, I have sometimes caused identical splitting of teeth, usually in the centre but sometimes at the side, but always in the same vertical row of teeth.

Careful consideration of the available literature fails to reveal evidence of teeth in the jaw of sharks having been formed subsequent to an injury or constant forward movement of a revolving gum.

F. GORDON CAWSTON.

Brittania Buildings,
West Street,
Durban.

[1] William A., "An Attempt to prove that the teeth of Cartilaginous Fishes are Perpetually Renewed", *Phil. Trans. Roy. Soc.*, **74** (1784).
[2] Gudger, E. W., "Abnormal Dentition in Sharks, Selachii", *Amer. Mus. Nat. Hist.*, **73**, 11, 249-280 (1937).

## Points from Foregoing Letters

Prof. G. Hevesy and A. H. W. Aten have administered radioactive sodium phosphate to goats and determined the amount of 'labelled' phosphorus found in blood and in milk, after varying periods. It takes 3–4 hours for the milk inorganic phosphorus to be almost entirely composed of individual atoms present in the blood plasma after the start of the experiment. Casein is apparently formed in the gland cells in about an hour, while it takes rather longer for the formation of the esterified phosphorus and longest to form the phosphatide molecules.

Prof. F. A. Paneth and J. L. Edgar describe a method for the concentration of atmospheric ozone by condensation and fractional distillation. The ozone was thereby separated from nitrogen peroxide and could be identified spectroscopically and determined chemically. The ozone content of London air was found to vary considerably; its mean value was $1{\cdot}1 \times 10^{-6}$ vol. per cent.

A table of thirty compounds which fluoresce at low temperatures (80° K.) and some of them at room temperature is given by Dr. J. T. Randall. The fluorescence in most cases is apparently that of the 'pure' compound. A number of substances (ZnS, AgCl, etc.) activated by manganese showed a common band between 5900 A. and 6000 A.

Dr. G. Nagelschmidt finds that crystals of pyrophyllite from California form long thin rods radiating outwards from the centres of spheres, and directs attention to the possible presence of rod-shaped particles in other clays.

Sugars containing 7 atoms of carbon in the molecule (similar to the mannoketoheptose isolated from the Avocado pear) have been detected by Prof. R. Robison, M. G. Macfarlane and A. Tazelaar in Robison's ester (phosphate ester from the products of fermentation of glucose).

The arterial blood of a child four months old with transposition of the large vessels was found by Dr. R. Brinkman and J. H. P. Jonxis to be completely reduced. Its capacity for oxygen absorption was 1·3 times as large as the value calculated from the hæmoglobin content. This was due to an extra capacity, interacting with the hæmoglobin system.

Dr. Max Hartmann and Fritz Benz find that the gonadotropic hormone of the pituitary anterior lobe and the gonadotropic hormone from urine contain a considerable quantity of sugar, the former 6 per cent of mannose and the latter 19 per cent. Prolactin and thyrotropic hormone contain only a small amount of mannose. It is possible that the sugar-content is an essential factor for the activity of this hormone.

The transition limited → unlimited swelling of long-chain molecules is discussed by Dr. E. Broda. He points out that the entropy change connected with swelling may be proportional to the chain length. The transition occurs discontinuously at a certain activity of the swelling agent. The transition point may be calculated from thermodynamical data concerning the solvation properties of the different groups.