It was found that these pollinators (chiefly bees) showed a decided preference for the petalled plants and flew over from one row of these to another, neglecting the apetalous plants growing in between.

Studies of the genetics of the apetalous character and its usefulness for practical breeding are in progress.

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¹ Sprague, G. F., *J. Hered.*, **30**, 143-45 (1939).

tion in the hybrid *G. hirsutum* × *G. Raimondii* shows twelve univalents and most of the bivalents.

A more detailed study is being put out as an official publication of La Molina Agricultural Experimental Station.

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¹ Hutchinson, J. B., *Trop. Agric.*, **16** (12), 271-272 (1939).

² Newcombe, H. B., *J. Hered.*, 30-12, 530 (1939).

Relationship of *Gossypium Raimondii* Ulbr.

Two notes have recently appeared on the relationship of the wild Peruvian species of cotton *Gossypium Raimondii*, Ulbr.: Hutchinson¹ and Newcombe² simultaneously grouped *G. Raimondii* with $2n = 26$ wild New World cottons on somatic counts made by Madoo. They placed it in the sub-group *G. Klotzschianum*, Anderss. *G. Davidsonii*, Kellogg, which it undoubtedly resembles morphologically, the former adding hybridization behaviour.

At La Molina, the chromosome conjugation of *G. Raimondii* at meiosis has shown thirteen bivalents.

In a cross *G. hirsutum*, L. (U4) × *G. Raimondii* the meiotic chromosome conjugation shows a mean of 12.57 univalents, 11.65 bivalents, 0.87 trivalents, and 0.125 quadrivalents, and a chiasma frequency of 1.62 per bivalent.

From this data it is suggested that *G. Raimondii* is more closely related to *G. armourianum*, Kearney, *G. trilobum* (DC) Kearney, *G. Harknessii*, Brandg., and *G. aridum*, Skovsted, than to *G. Davidsonii*, Kellogg and *G. Klotzschianum*, Anderss.

The accompanying photomicrograph of the conjuga-

× c. 1000.

Use of Adsorption Processes for the Detection of "Traces"

METHODS for the detection of a trace of a compound dissolved in water may be made very sensitive if that compound can be concentrated by adsorption at an interface. Thus an almost infinitesimal quantity of grease, adsorbed on a metal or mineral surface, is readily detected by its effect on the displacement of water from that surface by air¹. Very sensitive tests for copper, lead and cyanide ions were also discovered in the course of an investigation of the basic principles of the flotation process. Though these are not specific, they seem worth recording in illustration of a method that may sometimes be useful.

When a mineral is polished out of contact with air, there is produced a surface from which air is unable to displace water². A pyrite (FeS₂) surface prepared in this way becomes air-avid in a 25 mgm. per litre solution of potassium ethyl xanthate, as a bubble of air pressed against the surface will now adhere to it. One part of CN⁻ in 2×10^7 parts of water prevents this adhesion.

Sphalerite (ZnS), polished similarly, does not respond to this concentration of xanthate even in the absence of cyanide. However, if there is present 0.006 mgm. lead nitrate per litre as well as the xanthate, the surface does become air-avid, the lead ions acting as a link between the mineral surface and the xanthate ions. Likewise, 0.005 mgm. copper sulphate (CuSO₄·5H₂O) per litre induces air-avidity in the presence of sodium di-ethyl dithiocarbamate. Thus one part of lead in 3×10^8 parts of water and one part of copper in 8×10^8 parts of water are detectable. For copper the test is ten times as sensitive as the usual dithiocarbamate test³.

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University of Melbourne.
Jan. 11.

¹ Wark, I. W., "Principles of Flotation" (Melbourne, 1938).

² Wark, I. W., *NATURE*, **143**, 1024 (1939).

³ British Drug Houses, "Reagents for Spot Tests" (1934).

Angle of Repose of Snow on Solids

It is well known that the friction of solids on snow surfaces is larger than on ice surfaces. The higher kinetic friction obtained on snow is attributed to the extra work done in displacing and compressing the snow crystals¹. This may apply to the sliding of a