Chemistry. — "*On Isomorphous Compounds of Gold and Mercury.*" By Prof. TH. H. BEHRENS.

In his Manual of Microchemical Analysis the auther has pointed to analogies between thiocyanates of gold and mercury.

Renewed investigation of this subject has shown, that the isomorphism of these double thiocyanates cannot be fully established by means of compound crystals. Halogen compounds have then been tried, and from these complete series of compound crystals have been obtained. They were prepared by adding to mixed solutions of the chlorides and bromides of gold and mercury chlorides or bromides of thallium, caesium and rubidium. Thallous compounds act promptly; the compound crystals are interspersed with flakes of trichloride or tribromide of thallium. The action of caesium and rubidium compounds is slower and less energetic. It can be hastened and furthered by adding about one tenth part of alcohol. This takes up one third of the halogen, that was combined with gold (shown by a change of colour in the solution of bromides) while gold dichloride or — dibromide is fixed in the compound crystals along with dichloride or dibromide of mercury. If no alcohol is added the halogen, split off from the gold trihaloid must form trihaloid of caesium or rubidium, which is also readily attacked by hydrolysis.

Finally it may be mentioned, that the compound crystals of bromides will be found useful in testing for gold. With caesium the solubility is small, and the yellow colour of the crystals is seen without difficulty with a proportion of one part of gold to fifty parts of mercury.

Physics. — Prof. J. D. VAN DER WAALS presents on behalf of Dr. G. BAKKER of Schiedam a paper on: "*A remark on the Molecular Potential Function of* Prof. VAN DER WAALS."

In his „Thermodynamische Theorie der Capillariteit in de onderstelling van continue dichtheidsverandering" Prof. VAN DER WAALS finds for the potential of two material points at a distance r the expression

$$P = C - f\frac{e^{-\frac{r}{\lambda}}}{r}$$

in which C, f and λ represent the constants.