ite in the hydrogen clays at the end of the above cycle of operations. A relation between the mineralogical composition of the clay and the quantities of displaced Al^{+++} and Fe^{+++} ions is indicated by the above results. Further work with pure clay minerals is in progress.

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Structure of Aluminium Trimethyl

THE existence of the dimer aluminium trimethyl has aroused considerable interest. Electron diffraction determinations[1,2] are in satisfactory agreement with an ethane structure (I). However, this structure is for many reasons most unlikely : (1) it should differ from the bridge structures of the related aluminium halides[3] Al_2X_6, aluminium dimethylhalides[2] $Al_2Me_4X_2$, as well as of the boron and probably aluminium hydrides[4] ; (2) it cannot be accounted for by any existing valence theory ; no forces are available for joining the two $AlMe_3$ molecules ; (3) it requires a shorter interatomic distance (about $2 \cdot 20$ A.) between the equally charged Al atoms than that of a covalent Al–Al linkage ($> 2 \cdot 48$ A.) ; (4) the unstability (non-existence) of a dimer boron trimethyl cannot be explained.
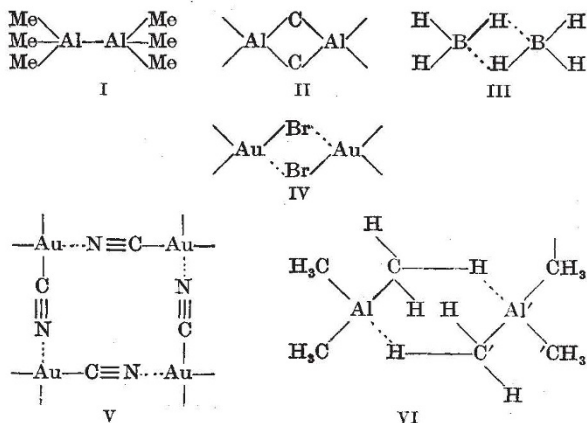
Raman spectra favour a bridge structure[5], but that of type II is excluded by the results of electron diffraction determinations[2]. As shown elsewhere[6], the stability of B_2H_6 and Al_2H_6 can be accounted for on the basis of the bridge structure[4] by the formation of B . . . H hydrogen bonds (of an essentially electrostatic nature) (III). This also allows a bridge structure for Al_2Me_6, which has not yet been considered (VI). A six-membered ring is formed by Al . . . H hydrogen bonds. Owing to the inductive electron transfer from the positive Al atom, the negative charge on the H atom should be appreciable. The non-existence of B_2Me_6 can be explained by the much smaller electron transfer from the less-positive B atom, which is not compensated by the expected shorter interatomic distance. Al_2Me_6 is now no exception to the bridge structures of its related aluminium and boron derivatives. This is comparable to the dimer gold dialkyl halides and tetramer cyanides[7], where one atom (halogen) (IV) and two atoms (C≡N) (V) respectively form the bridge. No new valence theory is required, and the Al–Al distance is now longer than that of a covalent linkage.

It is noteworthy that the distances to be expected for structure VI are in qualitative agreement with the peaks of radial distribution curves derived from electron diffraction determinations, which are $2 \cdot 07$, $2 \cdot 6$, $3 \cdot 42$, $3 \cdot 93^1$ and $2 \cdot 01$, $2 \cdot 58$, $3 \cdot 3$, $4 \cdot 05$ A. respectively[2]. The C–H and Al–C distances within the six-membered ring will be near $1 \cdot 09$ and $2 \cdot 01$ A. respectively, the Al . . . H distance slightly longer than that of a covalent linkage and not very different from $(1 \cdot 7)$ $1 \cdot 8$ A. Making the reasonable assumption that the angles CAlH and AlCH in the ring are about $109 \cdot 5°$, the important distances mainly contributing to the radial distribution curve below 4 A. are Al–C $2 \cdot 01$ A., Al–C' $2 \cdot 73$ A., Al–H $2 \cdot 59$ A., Al–Al' $3 \cdot 22$ A., C–C $3 \cdot 28$ A., C–C' (both in ring) $3 \cdot 5$ A., C (in ring)–C' (outside ring) $4 \cdot 0$ A. These distances show a reasonable relationship to the observed peaks. This should justify new quantitative calculations, based on the suggested bridge structure, for testing such models and possibly establishing its actual dimensions.

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Mechanism of the Red Cell Changes in Non-hæmolytic Jaundice

CERTAIN characteristic changes are found in the erythrocytes in obstructive jaundice. The red cells are increased in diameter but not in thickness, so that they are relatively flat cells. Associated with this alteration in shape, target cells are seen in the blood in large numbers and the red cells are resistant to hæmolysis by hypotonic saline solutions. The volume of the cells may or may not be increased.

The same changes have been demonstrated in cases of toxic-infective jaundice. Here, in most