coordination of the Sb atoms is distorted octahedral or 4-coordinate.

2SbCl₄·3(4-phenylpyridine): a = 11.501(15), b = 15.363(2), c = 14.445(3) Å, a = 72.48(2), β = 85.38(2), γ = 87.70(1)°. P1, Z = 2. The most characteristic feature of the structure is the T-shaped geometry of one of the SbCl₄ molecules, whereas the other is pyramidally shaped as the molecules in SbCl₄ itself (Linka, Acta Cryst. (1979) B35, 2020) and in adducts with amines. Another T-shaped SbCl₄ fragment has only been found in the complex with 2,2'-bipyridine. Sb-Cl bond lengths vary from 2.36 to 2.74 Å, depending on the strength of bonds in trans position.

2SbBr₃·biphenyl: a = 11.301(15), b = 15.633(16), c = 8.194(5) Å, α = 107.54(8)°, P2₁/a, Z = 2. SbBr₃ molecules and bipyphenyl molecules form a centrosymmetric complex with coplanar arrange-ment of the phenyl rings. In agreement with NQR (Greechiskin & Kynttel, Opt. Spectry. (1964) 16, 87) and Raman (Perkampus & Schönberger, Chem. Phys. Lett. (1976) 44, 217), where the independent SbCl₄ molecules are differently arranged on the phenyl rings, which are not coplanar but display a dihedral angle of 40.5°.

The crystal structure of the title compound [Te(N(NP₄)₂)₂]₂ has been prepared from a mixture of [Te(tu)₄]Cl₂·H₂O (tu = triethylenetetramine) and NH₄[N(P₄H₄)₂] dissolved in methanol. Its structure has been determined by means of X-ray crystallographic methods. The yellow crystals are triclinic, space group P1, with a = 10.187(1)Å, b = 12.929(5)Å, c = 8.282(3)Å, α = 89.04(2)°, β = 92.98(1)°, γ = 77.40(2)° and Z = 2. The crystals are built up of centrosymmetric, square planar Te(II) complexes. This is the first such complex where tellurium is bonded to two bidentate ligands. There are two crystallographically independent half molecules in the unit cell with an average Te-S bond length of 2.685(13)Å. Average intraligand S=Te-S angle is 86.8(1)°. Ignoring the phenyl groups the complex molecules have an approximate chair configuration.

The crystal structure of the title compound [Pr(DMA)₃(H₂O)]₃(F₃CBrSO₃)₉ has been determined by X-ray crystallography and refined anisotropically to an R-factor of 9%. It is part of a series of studies on the coordination of lanthanide adducts and their optical properties (Castellano and Becker, Acta Cryst. (1981), in press). 3299 independent reflections with intensities above background were measured. Space group is P2₁ and unit cell parameters are a = 6.53(1), b = 29.89(1), c = 11.44(1) Å, β = 103.6(1)°, with Z = 2. The cation is coordinated to nine oxygen atoms located at the vertices of a tricapped trigonal prism with approximate symmetry D₃h. Six oxygen atoms from equal number of water molecules are located at the vertices of the trigonal prism and three oxygen atoms from DMA groups are at the capping positions. The trifluoromethane sulphonate anions are not coordinated to the cation and are somewhat disordered. The fluorescence spectrum data obtained from the compound doped with Eu⁺⁺, shows selection rules approximately consistent with the ones expected for point group D₃h on pure symmetry grounds.

Work supported by FAPESP, CNpq and BID-FINEP.