Ternary mixed Ca/Sr-Ba triplumbides of overall composition $A^{II}\text{Pb}_3$ were synthesized from stoichiometric mixtures of the elements. The structures of the compounds have been determined by means of single crystal X-ray data. All structures exhibit close-packed ordered APb$_3$ layers containing Pb Kagomé nets, which are stacked in different orientations. Depending on the stacking sequences, the resulting lead polyanion resembles the oxygen nets of the hexagonal (face sharing octahedra, $h$ stacking, Ni$_3$Sn-type structure) or the cubic perovskites (corner sharing octahedra, $c$ stacking, Cu$_3$Au-type structure). The known binary compound BaPb$_3$, the structure of which has been re-determined from single crystal data (trigonal, space group $R\bar{3}m$, $a = 729.06(2)$, $c = 2564.43(10)$ pm, $Z = 9$, $R_1 = 0.0353$), shows a $(hhc)_3$ stacking (TaCo$_3$-type structure). A small partial substitution of barium against calcium (Ca$_{0.03}$Ba$_{0.97}$Pb$_3$: trigonal, space group $R\bar{3}m$, $a = 726.0(2)$, $c = 3443(2)$ pm, $Z = 12$, $R_1 = 0.0542$) or strontium (Sr$_{0.11}$Ba$_{0.89}$Pb$_3$: $a = 727.3(2)$, $c = 3421(2)$ pm, $Z = 12$, $R_1 = 0.0424$) causes a structural change to the HT-PuGa$_3$ structure type with a $(hhcc)_3$ stacking sequence. At an approximate 1:1 ratio (35 to 53 % Sr) of strontium and barium (Sr$_{0.56}$Ba$_{0.44}$Pb$_3$: trigonal, space group $P6_3/mmc$, $a = 715.82(2)$, $c = 1717.91(7)$ pm, $Z = 6$, $R_1 = 0.0309$) the PuAl$_3$ structure type [(hcc)$_2$-stacking] has a distinct homogeneity range. The series is terminated with the pure c stacking of SrPb$_3$ and CaPb$_3$. As already noted from the above series, the stacking of the close-packed layers is influenced by the ratio of the atomic radii of the contributing elements. The electronic stability ranges, which are discussed on the basis of the results of FP-LAPW band structure calculations and in comparison to further compounds known from the literature, can be explained using Zintl/Wade rules. Still, due to the presence of only partially occupied steep Pb-\emph{p} bands of $\sigma$ bonding characteristic, the compounds are metals exhibiting pseudo band gaps at or near the Fermi level. Thus this structure family represents an instructive case of transition from polar ionic/covalent towards (inter)metallic chemistry.

\textit{Key words:} Plumbides, Barium, Crystal Structure, Band Structure Calculation