

labile or adsorbed? Before answering this question, it is desirable to consider the theoretical possibility of the replacement with fluoride of the remaining percentage of anions in the bone salt. There does not seem to be any reason as to why it cannot be assumed that it is possible to replace, in the manner of Freundlich adsorption isotherm, the remaining percentage of anions in the bone salt with fluoride, provided, fluoride, under such conditions, is adsorbed by the bone salt. It can be seen from the data presented that, in the twelfth equilibration study, the liquid phase contained no carbonate, about 0.3 mg. of P per 50 c.c. of the solution, and had the fluoride concentration little higher than that of the original solution, indicating that further quantity of fluoride was not only not being adsorbed but that part of the previously adsorbed fluoride was being released back into the liquid phase. As fluoride was not being adsorbed, the remaining anions were not being replaced with it, and consequently were not being released into the liquid phase. Such a circumstance, however, can be viewed differently also. Further quantities of fluoride were not being adsorbed by the bone salt, because there were no replaceable anions left in it. In that case, the remaining percentage of anions will have to be regarded as that fraction of the bone salt, which has been designated as non-labile and real, and the rest of

bone salt, as labile and adsorbed. However, it does not seem to stand to reason to assume that so large a fraction as 92 per cent. of the total P in the bone salt is adsorbed on the remaining 8 per cent. Under such circumstances, the only other alternative has to be accepted that all the anions in the bone salt, at least theoretically, can be replaced with fluoride by the process of repeated equilibration, and in the manner of Freundlich adsorption isotherm. Thus, the theoretical division of bone salt, on the basis of its exchange reactions *in vivo*, into labile and non-labile parts, has not been found to be correct *in vitro*. It seems to be the fundamental property of the bone salt to enter into exchange reactions with the anions of the liquid phase in the manner that can approximately be denoted by the Freundlich adsorption isotherm. Such a property of the bone salt may be the basis of the exchange mechanism in bone *in vivo*.

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EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

THE European Organization for Nuclear Research has emerged from its planning phase and will shortly become a reality under the terms of a Convention signed recently in Paris by representatives of twelve nations.

The programme for the new European Organization includes the construction of a new international laboratory for nuclear research, and the continuation of co-operation between existing laboratories in the various countries.

The construction of the laboratory and its equipment is expected to require seven years. The cost of all activities during those seven years will total 120 million Swiss francs, including construction of the laboratory and its equipment. This will consist mainly of two large

accelerators, a synchro-cyclotron, which will probably be completed in four years, and a proton synchrotron that will take seven years to construct.

When the Convention becomes effective, it is planned to build the laboratory near the French border three miles north-west of Geneva.

The research will be fundamentally scientific and of non-military character. None of the work will be secret. The laboratory will not include an atomic reactor and will not be used for the production of high-energy materials. It will be used only to study the properties of atomic nuclei, and of such elementary particles as protons, neutrons and mesons.