

Recovery is poor in the Florida area and involves waste disposal as well as conservation problems. A better means should be developed for reducing the volume of phosphate slimes, through improved dewatering systems to reduce the volume, by decreasing drying time of impoundments and by recovery of the lost phosphate. Improvements in recovery will extend the life of the area. The subject deserves immediate attention.

All areas share a common problem in that low-grade ores are difficult or uneconomic to treat, and high losses are present in discarded fractions. Common solutions are not applicable to every area but the problem merits individual attention as both a conservation and a waste disposal issue.

Similarly, the extraction or disposal of associated elements presents a general problem. These in some instances detract from the commercial value of the phosphorus product and in others would, if effectively recovered, add to the economic feasibility of production or satisfy some demand for the other elements. In the former case lowering the iron and alumina content of all beneficiated phosphate rock would improve marketability and extend the resource base. On the other hand, recovery of uranium, vanadium, and rare earths dissolved during acidulation of phosphate ore should receive attention from a supply standpoint. Technological problems such as the production of large amounts of impure gypsum byproduct (see section on sulfur) and the release of a large tonnage of fluorine (see section on fluorine) in the wet process of producing phosphoric acid, and the recovery of lost mineral values, exist.

The marine environment is an attractive potential source of phosphorus to meet future requirements at home and abroad. Except for the notion that phosphorus minerals occur in some abundance in relatively shallow locations, little is known as to the actual dimensions and nothing is known about how these might be commercially extracted. Considering the presently inadequate state of the art, the subject deserves early and concerted attention.

The electric furnace production of phosphorus depends on eastern coke (mainly coke breeze). Transportation adds considerably to the cost and a satisfactory method of making the reductant from western coals would lower the cost of the process and benefit both the western phosphate interests and the coal producers.

PLATINUM

The United States is not likely to ever supply much of its requirements for platinum or the associated metals from domestic sources. However, world resources are large and sufficiently distributed so as to minimize long-term dependence upon any single source. The changing use pattern suggests that improving recovery from secondary sources deserves attention but because of the high unit values involved it is expected that the trade will react appropriately.

Advances in refining and separation techniques might serve to reduce the traditionally high cost of the platinum group of metals. Present technology is complex and elaborate and, incidentally, highly efficient. Accordingly, improvements in technology would not affect supply, only costs, and the subject does not claim a high priority for attention.

A continued rising demand is expected because of increasing use as petroleum processing catalysts and as materials to withstand severe heat and corrosion environments. The degree to which other more plentiful substances might replace platinum in these growing applications is not well understood.

POTASSIUM

The industry is, for the time being, over-expanded. The development of new sources in Canada together with expanded capacity in other potash areas of the world spells a world surplus at least through 1971. The result is increased competition effecting a lowering in price, expansion of normal consumption rates because of the price situation, and a shifting of supply patterns to the benefit of the richer and lower cost areas. Domestic sources, which have already lost some of the domestic market, stand to have their percentage of the domestic market further reduced. Much of the industry has foreign as well as domestic holdings and is expected to operate where the profit margin is most favorable. Much of the domestic production comes from New Mexico and the decrease in domestic production will be felt in that locality. As a sociological rather than a supply problem, some means of deferring, delaying, or minimizing the termination of the New Mexico operations should receive immediate attention.