

STONE

As in the case of sand and gravel, stone resources of the United States and the world are, in a sense, inexhaustible. However, exacting specifications determine the marketability of stone in important instances and sources adequate for such needs at reasonable costs are not unlimited. One example is seen in the production of limestone for chemical and metallurgical purposes, where new sources with suitable specifications and reasonably located in regard to established or contemplated markets are matters of some concern.

Because of the variety of industrial uses the local availability of stone that will meet specifications of local markets influences the industrial and economic development potential of an area.

Land-use conflicts are present and will tend to increase. Markets for major products of the stone industry are close to expanding metropolitan areas and will feel the impact of zoning and other regulations. These factors, and others, may dictate that an increased share of commercial stone will be derived from underground sites in the future.

Large tonnages of low cost and high quality limestone and lime products are available in easily mined and widely distributed deposits close to consumers. Limestone fines, waste residues and sludges present a pollution threat to air and water. However, in the future these materials might be used as an aid to controlling pollution such as neutralizing toxic gases and acid wastes, and as soil stabilizers and conditioners for the revegetation of other types of waste dumps. The subject deserves attention.

STRONTIUM

The United States consumes about half of the world's production but produces none. Domestic resources are substantial but of a grade that precludes competition with imported material. Nothing is foreseen that will alter the pattern.

No satisfactory substitutes are known for the major uses of strontium compounds in pyrotechnics and tracer ammunition. Stockpiling effectively accommodates increased demands during periods of national emergency.

SULFUR

At once the subject of abundance, as an unwelcome coproduct of other materials, and of frequent scarcity, in regard to primary commercial supply, sulfur supply, use and disposal present problems of growing significance. Because sulfur is employed in large quantities throughout the industrial complex, continued domestic commercial abundance at reasonable costs is desirable. Present major commercial sources (Frasch), though large, are insignificant in comparison to the potential sulfur resource contained in nonelemental forms. Means of diversifying commercial supplies through improvement of processes for sulfur recovery from non-elemental sources would profoundly affect future industry practices and expansion.

The capture of sulfur from solid, liquid or gaseous effluents and wastes, seen now as essentially a health and environmental necessity, can be most effectively accomplished in the presence of economic incentives to the producers of such effluents. Such incentives are possible only with the discovery and development of devices or techniques permitting the recovery of sulfur in some usable form at costs that compete effectively with other sources of sulfur. Conversely, the absence of such devices or techniques will not deter the demand for restricting sulfur in effluents for health and environmental reasons without economic benefits. Accordingly, absence of technologic achievements in this area will cause a variety of disruption throughout the extraction, processing and utilization sectors of many industries and widely influence consumer costs.

The fertilizer industry consumes almost half of the commercial sulfur in the United States. Some substitution for sulfur in this application is possible, and probable if sulfur prices should rise sharply. The effect of such reductions in use seems small in comparison to an inevitable increase in demand brought on by new and expanding needs elsewhere. However, the variety of ways through which other products (like hydrochloric acid) might be substituted for sulfur products (see section on sodium) deserves attention in research directed to new processes development or the economics of local use-patterns.