The other method of processing salt is more complicated but produces a wider range of chemicals for industry. Humphrey Davey showed the way about 150 years ago. He passed an electric current through a liquid of sodium compounds and broke them down into their component parts. Electrolyzed brine yields three main chemicals—sodium, chlorine and caustic soda.

The last is used widely as a cleanser in the fur felt hat, clothing and leather industries. Cotton thread is mercerized for greater strength by dipping in caustic soda. The rayon and plastic industries depend on caustic soda. So do numerous others such as rubber, soap, pharmaceuticals, explosives and paper. The list could be extended to the limit of your boredom.

Chlorine has probably saved more lives than all the antibiotics together—as a purifier of water and the victor over once prevalent typhoid. Chlorine is used widely in industries—in making synthetic rubber, nylon stockings, photographic printing paper and a host of other everyday products.

The third product of electrolyzed salt, pure metallic sodium, isn't as yet quite so ubiquitous as its brothers. But chemists are finding uses for it in producing tetraethyl, detergents, the case-hardening of steel and the refining of lead bullion.

But though salt is priceless for life and industry we are never likely to run out of it. Seawater has an average of about three per cent. salt and there are about 500,000,000 cubic miles of brine in the oceans—sufficient to cover all Australia with salt (if you were so inclined) to a depth of five miles.

In addition, there are vast supplies on land in rock form or pockets of brine or in salt lakes. Salt deposits at Wieliczka, Poland, have been worked for centuries without exhaustion. The deposits are over 1,200 ft. thick and the galleries run for a total length of 500 miles. There are also vast deposits in Michigan. In Utah there's the world's largest salt lake, 75 miles long and 25 to 50 miles wide. The water is one-sixth salt. Large rock salt and brine deposits in Britain, notably in Cheshire, alone supply about one-tenth of the world's needs.

Salt, as we know, dissolves easily in water. Water for aeons has been dissolving the earth's salt and carrying it into the oceans which very slowly get more and more salty. From time to time, the pattern has been reversed and shallow seas have spread out over continents and after ages have slowly evaporated, leaving behind vast deposits of salt. Silt and gravel have covered them and preserved them underground.

Primitive man had to work hard for his salt. Many a prehistoric battle must have been fought for a salt pan of a dried-up lake or for the deposits from a natural spring of brine. In time man must have learnt to distil it by boiling seawater or brine from wells. But it was costly of effort and until more recent times the commodity remained expensive.

Today, modern machines and techniques make it one of the cheapest products on earth. Salt, to-day, is mined by giant machines which gobble up the rock salt. Or it is obtained by evaporating brine from salt lakes or the sea. Or, more dramatically, in the case of deep deposits, by an adaptation of the American oil well technique. High speed rotary bits bite through the rock salt and a high pressure stream of water and, sometimes, liquid mud flushes the rock salt to the surface.

About three-quarters of the United States' supply of salt comes from Michigan where a resolute local businessman called Crockett McElroy pioneered the drilling technique in 1882.

For years the citizens of St. Clair, 40 miles north of Detroit, had been gathering profitable salt from the brine of natural wells. But round about 1882 the wells started to dry up. Crockett McElroy reasoned that there must be a lot more brine somewhere down below and began to drill. After four months the drill had passed 1,500 ft. and no brine in sight. A month later at 1,633 ft. he struck rock salt—very dry and very hard.

McElroy was in despair. He had sunk a lot of money in the drilling. You couldn't pump up solid salt. Or could you? If it was brine you could! McElroy had got his bright idea. Inside the large pipe he sank a smaller one. Down the outer pipe and around the smaller one, he pumped water which dissolved the rock salt at the bottom and turned it into brine! By forcing water down under pressure, McElroy was able to push a continuous flow of brine up the inner pipe.

Crockett McElroy had found a way which today in Michigan produces 16,000,000 tons of salt-in-brine a year.

Common stuff, salt, but romantic, too.

Meet Warren Mumbler and Amos Donovan