

THE MALE SEAL.

The illustration presented on this page, a male seal, is taken from Capt. Scammon's "Marine Mammals of the Pacific Coast," of a full-aged male, an individual of bulk and strength, and of a surly expression. These old males are cruel, despotic wretches, and the account of their deeds as laid down by Scammon leads one to anything but admiration of them. They fight mercilessly for positions on the rookeries, and they are also most cruel to their female companions. It is no unusual occurrence in the height of the season to see two full-grown males fight by the hour, exhibiting much tact in their assaults upon each other, both endeavoring to gain advantage by some adroit movement—at times making a savage lunge with their mouths, or seizing each other by the fore flippers, or gauging necks and bodies with their sharp, tusk-

viewing his family, scolding those wives which crowd or disturb the others and fiercely driving off the others. This surveillance keeps him actively occupied. In two or three days after landing on the rookery the young seals appear, weighing about six pounds each. The young seals are very vigorous and soon begin nursing. The mother manifests strong affection for her young.

NITRATE OF SODA.

The discovery of nitrate of soda near Brown's station, Nev., may lead to results vastly important to the Pacific slope and to the country at large. This valuable salt has been found in extensive beds only in the province of Tarapaca, among the hills which skirt the coast of Peru. These beds extend over a territory of 150 miles. The hills are covered with a light, sandy marl,

ful. The test is simple and admissible of no mistake. The suspected crystal or salt should be reduced to a powder, and intimately mixed with an equal proportion of charcoal. This, when placed upon a heated iron, a red hot shovel for instance, will deflagrate—will flash like powder—the fire running from grain to grain in a similar manner. The compound is powder minus sulphur. Where it is suspected that the earth is strongly impregnated with the nitrate, take a kettle and fill it two-thirds full of the earth and the remainder with water. Heat it, stirring the while, and when thoroughly mixed and heated, so that the water will have become saturated with the salt, allow the solution to settle. The liquid poured off, the mud will contain the salt, which is secured by evaporating. The crystal is then tested as before. The test is accurate, and may be applied by any one without apparatus.

A good nitrate mine is more valuable than a



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like teeth. Sometimes several old males are seen together on a separate bench, who are cut in every direction, and apparently had retired from the main herd, being unable to continue the fight in consequence of wounds received.

The old males maintain a rigid supremacy over the young males. The old ones are called by the natives, *seacuth* (married seals). These welcome the females on their arrival, and watch over and protect them and their young until the latter are large enough to be left to the care of their mothers and the young males. The males under six years old are not able to maintain a place on the rookery, or keep a harem, and they are called *holluckuck* (bachelors).

The old males first appear upon the rookeries in the pairing season, and taking their places prevent the young males from landing. Thus they compel them either to stay in the water or go to the upland above. In locating on the rookery each old male reserves a little more than a square rod of space for himself and his 10 or 15 wives. When the space is all filled the old male walks around complacently re-

mixed with minute fragments of shell. When this covering yields and crackles beneath the feet, it indicates the presence of nitrate of soda. On digging a foot or two the salt is found, overlaid usually by a stratum of common salt. Portions of this nitrate of soda are of a pure sugar-like whiteness, other portions being colored reddish brown, lemon yellow and gray. A large portion of the provincials find employment in extracting and refining the salt, which is shipped from Iquique. In 1837 the exportation aggregated 120,000 quintals, England consuming two-thirds and France one-third. The nitrate mines have long been the chief wealth of that section of the country, and their importance can well be imagined, when it is remembered that the Peru-Chilean war grew out of disputes over the revenues of those fields.

Some time ago the State Mineralogist of California, Mr. Hanks, received samples of crystallized nitrate of soda from this county. Tests prove the salt to be of good quality and exceedingly valuable. Mr. Hanks advises prospecting the desert regions, where evidences of volcanic action are present, or where alkalis are plenti-

gold mine. The cost of extracting the salt at Tarapaca, where it is principally secured by the process of lixiviation above described, is as follows: Reckoning for each 100 lbs., labor is set down at 62 cents; fuel, 38 cents; tools and powder when blasting is necessary, 12 cents; transportation to Iquique, 75 cents, a total of about \$1.87.

In quantity, the salt sells for about 90 the hundred lbs. The profit is apparent. The uses to which nitrate of soda is put are numerous. It is substituted for nitrate of potash—saltpetre—to which it is closely allied, in preserving meats as in curing hams, pickling pork and corned beef, the manufacture of nitric acid and various other purposes. Owing to its deliquescent properties, it has not been employed in the manufacture of gun powder, although it is not known but in some varieties of explosives it might be employed, if indeed it is not already. Careful search over the regions given over to acid plains and lava beds may result in the discovery of hitherto unsuspected mines of wealth.

THE Yosemite valley is now open to tourists,