

chromates have been studied in rabbits by Drs. Yergens* and Posner.† They noticed chiefly the purple liver, the dark, engorged kidney, showing incipient nephritis, and the dark, unnatural blood. They, however, made no distinction between the action of the bichromates and the neutral chromates beyond one of degree; they found the former much more active, but they have apparently entirely overlooked the nature of the blood changes produced by bichromates.

Owing to the indefinite nature of the tissue changes described as the result of poisoning by bichromates, it seemed to be of interest to determine, if possible, what, if any, were the differences between the effects of chromates and bichromates on the system, and to try to ascribe to each salt its own physiological action.

Two rabbits were poisoned—one with bichromate of potash, as described before, the dose being about 15 grains, the other with neutral potassium chromate; the dose given in the latter case was between 20 and 30 grains, the fatal dose, as found by Posner, being about 9 or 10 grains. The rabbit poisoned with bichromate died in three-quarters of an hour with no symptoms of irritant poisoning, no purging or signs of violent pain, the chief symptoms being slowing of the heart, slow and intensely difficult breathing, with blueness of the skin of lips and ears, increasing till death; there was but one convulsion, and that just before death. The rabbit that had taken the neutral chromate showed symptoms of irritant poisoning from the beginning, the first symptom appearing half an hour after; purging, expulsion of urine, convulsions, quick and shallow breathing were the chief symptoms. The post-mortem examination made immediately after death showed that the rabbit which received the bichromate had the same engorged purple liver and engorged kidneys which characterized the action of the salt; the lungs were pale and anæmic; the blood was of chocolate-brown color, and it gave at once the absorption spectrum of methæmoglobin. Thus the chief differences between the two forms of chromate

* Arch. f. Exper. Pathol. u. Pharmacol., Bd. VI, Hft. 1 and 2, 1875.

† Virchow's Archives f. Pathol. Anat., Hft. 2, 1830.