SCIENCE.

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Attention is called to the "Wants" column. All are invited to use it in soliciting information or seeking new positions. The name and address of applicants should be given in full, so that answers will go direct to them. Th "Exchange" column is likewise open.

MADSTONES AND THEIR MAGIC.¹

For centuries many accounts have been current regarding the virtues, real or imaginary, of certain bodies known as snake stones and madstones, which are asserted to have the power of absorbing poisons from wounds. The literature of two hundred years ago contains references to these substances; and even now some persons have a lingering belief in their efficacy. The subject is a curious one, and a brief account of it may be of interest, particularly of the origin and identification of one of these peculiar bodies.

Jean Baptiste Tavernier, the great oriental traveller of the seventh century, in his "Travels in India" (see Dr. Valentine Ball's translation in two volumes, London and New York, 1889, pp. lxx. 429; xix. 496) says: "I will finally make mention of the snake stone, which is nearly of the size of a double doubloon (a Spanish gold coin), some of them tending to an oval shape, being thick in the middle and becoming thin toward the edges. The Indians say that it grows on the heads of certain snakes, but I should rather believe that it is the priests of the idolaters who make them think so, and that this stone is a composition which is made of certain drags. Whatever it may be, it has an excellent virtue in extracting all the poison when one has been bitten by a poisonous animal. If the part bitten is not punctured, it is necessary to make an incision so that the blood may flow; and when the stone has been applied to it, it does not fall off until it has extracted all the venom, which is drawn to it. In order to clean it it is steeped in woman's milk, or, in default of it, in that of a cow; and after having been steeped for ten or twelve hours, the milk, which has absorbed all the venom, assumes the color of madder. One day when I dined with the Archbishop of Goa, he took me into his museum, where he had many curiosities. Among other things he showed me one of these stones, and, in telling me of its properties, assured me that it was but three days since he had made a trial of it, after which he presented it to me. As he traversed a marsh on the island of Salsette, upon

¹ This article also appeared in the New York Sun.

which Goa is situated, on his way to a house in the country, one of his palanquin bearers, who was almost naked, was bitten by a serpent, and was at once cured by this stone. I have bought many of them, and it is that which makes me think that they make them. You employ two methods to ascertain if the snake stone is good and that there is no fraud. The first is by placing the stone in the mouth, for then, if it is good, it leaps and attaches itself immediately to the palate. The other is to place it in a glassful of water, and immediately, if it is genuine, the water begins to boil."

Thevenot says, in his "Voyages," p. 94, that snake stones were made of the ashes of the root of a certain plant, mixed with a particular kind of clay. Some snake stones appear to have been made of charred bone (see, for an exhaustive account of this subject, Yule-Burnell, "Anglo-Indian Glossary"). The belief in their efficacy is still very general in India; by some they are supposed to be found in the head of the adjutant bird (see "Jungle Life in India," p. 83).

Francisco Redi describes, in his "Experimenta" (Amsterdam, 1685, pp. 4 to 8¹, the extraordinary healing power attributed to stones obtained from the heads of certain serpents, called by the French "cobras de capello," found throughout Hindostan and Farther India. These stones are claimed to be an infallible remedy for the bites and stings of all kinds of venomous reptiles or animals, and likewise for wounds made by poisoned arrows, etc. He repeats the usual tales of their adhering powerfully when applied to the bite or wound, and clinging to it like a cupping-glass until they had absorbed all the poison, when they would fall off spontaneously, leaving the man or animal sound and free. Then follows the account of steeping the stones in milk to remove the poison, the milk assuming a color between yellow and green. These wonderful stones and the narrations concerning them had been brought to Italy by Catholic missionaries, who seem to have entire faith in their powers; so that Redi says they offered to prove the accounts by any number of experiments, such as would satisfy the most incredulous, and prove to medical men that Galen was correct when he wrote (chapter xiv. book I.) that certain medicines attract poison as the magnet does iron. For this purpose a search for vipers, etc., was recommended; but, owing to the season being later and colder than usual, none could at that time be obtained, as they had not emerged from their winter quarters. An experiment was therefore substituted, after much consultation among the learned men of the Academy of Pisa, whereby oil of tobacco was introduced into the leg of a rooster. This was regarded as one of the most fatal of such substances, and was administered by impregnating a thread with it to the width of four fingers and drawing it through the punctured wound. One of the monks forthwith applied the stone, which behaved in the regular manner described. The bird did not recover, but it survived eight hours, to the admiration of the monks and other spectators of the experiment.

Redi states that he himself possessed some of these stones, and also Vincent Sandrinus, one of the most learned herbalists of Pisa. Redi describes them as "always lenticular in form, varying somewhat in size, but in general about as large as a farthing, more or less. In color some are black like Lydian stone, tinged at times with a reddish lustre others white, others black, with an ashy hue on one side o both," etc.

Up to the present time no one has apparently identifie what Tavernier referred to in speaking of snake stone. I however, occurred to the writer, after receiving a quantit