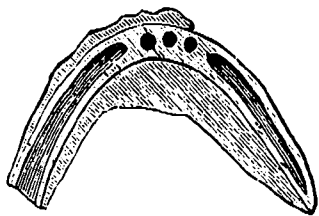
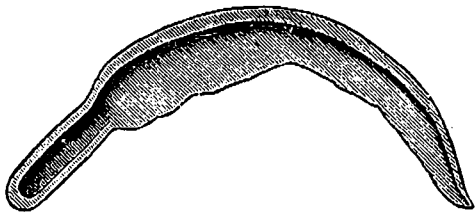


animals employed for ploughing were oxen; occasionally an ox and an ass were yoked together; camels were seldom used, and horses very rarely



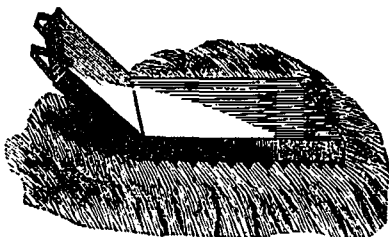
PRE-HISTORIC BRONZE SICKLE, FOUND AT CHEVROUX, FRANCE.

—the latter pulling too fast to suit the lethargic habits of the Egyptian or Israelite. The ancient plough was wholly of wood, and in some instances consisted of little more than a pointed stick, which was forced into the ground as it was drawn forward. An important implement of husbandry in those days was the ox-goad, which was an indis-



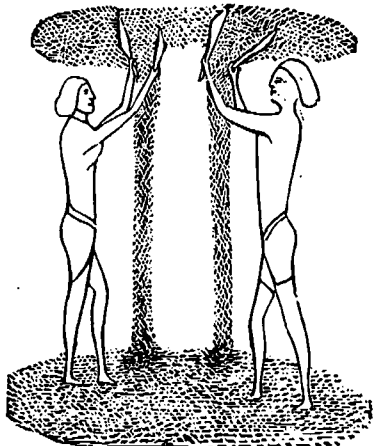
SICKLE OF THE IRON AGE—PRE-HISTORIC.

pensable accompaniment of the plough. The upper end, with its pointed prick, serves instead of rein and lash to urge on the ox, and the other end with a sharp piece of iron is used to clean off earth and weeds from the share, and to cut away any roots or thorns. It was to sharpen this part of the goads



THE CHARATZ OF EGYPT.

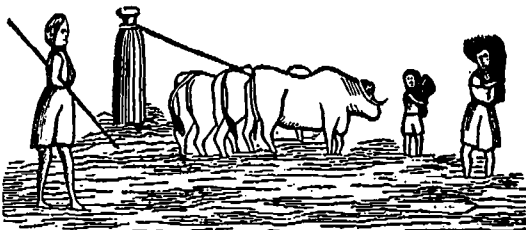
that the Philistines permitted the Jews to have a file in the early days of Saul. References to the goad in the Bible are numerous and interesting. Solomon says that "the words of the wise are as goads," to keep or guide in the right path, and to stimulate the indolent to exertion. Our Lord, in his address to Saul, says, "It is hard for thee to kick against the pricks"—a proverbial expression, taken from the action of an unruly ox. The proverb is exceedingly expressive, and one which conveys to all the world, where the goad is known, a most important lesson—namely, that of not rebelling against our rulers or guides.



WINNOWING IN ANCIENT EGYPT.

Turning to harvest operations, the instrument in use from time immemorial for cutting corn has been

the sickle, and those used by the ancient Jews, Egyptians and Chinese appear to have differed very little in form from those employed in Great Britain and America in the present century. The grain was not bound into sheaves, but gathered into large bundles. Two of these, secured in a large network of rope, were placed a few feet apart. The camel is made to kneel down between them, the large bundles are fastened to his pack saddle, and at a signal from the driver, up rises the peaceful beast and marches off towards the threshing floors. Arrived there the patient animal kneels down again,



ANCIENT THRESHING-FLOOR, WITH CATTLE TREADING OUT GRAIN.

and is relieved of his awkward load, only to repeat the same operation all day long, and for many



CAMEL CARRYING STRAW TO THE THRESHING-FLOOR.

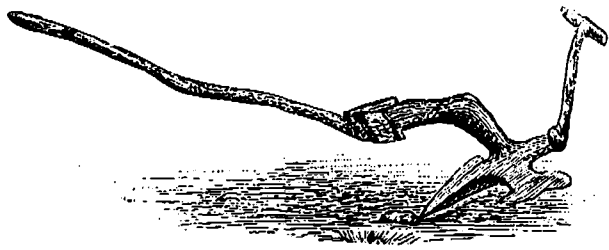
weeks together. The threshing floors were arranged near the town or village, and the most common mode of threshing was with the ordinary slab,



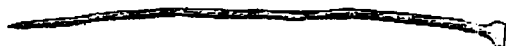
MOWREJ, SHOWING STONES ON BOTTOM.

called *mowrej*, which was drawn over the floor by oxen, until not only was the grain shelled out, but the straw also was ground into chaff. To facilitate this operation, bits of rough lava were fastened into its bottom, and the driver sits or stands upon it. This was superseded in later times by the threshing sledge, a heavy frame mounted on three rollers, which was dragged over the corn. An improvement on this had circular saws attached to the rollers; doubtless it is to this instrument Isaiah refers in the 41st chapter of his prophecies: "Behold, I will make thee a new sharp threshing machine, having teeth. Thou shalt thresh the moun.

tains and beat them small, and shalt make the hills as chaff. Thou shalt fan them, and the



PLOUGH.



OX-GOAD.



YOKE.

wind shall carry them away, and the whirlwind shall scatter them." There were times when no machines were used, the corn being literally trod-

den out by oxen and asses, while the command of Moses not to muzzle the ox that treadeth out the corn was faithfully obeyed, and to this day is not forgotten.

The next era in agricultural development and the improvement of implements is that of the Romans. The pursuit of husbandry was long the only source of wealth open to Roman patricians, and it was deemed the most honorable of occupations. Its operations were then directed by men of wealth and learning, and no wonder that its literature was so copious, and held in so high estimation. Cato, who died 150 B.C., was the first and most celebrated agricultural writer. The large farming system had in his time been fully established; and he gives us not only the most minute particulars regarding the management of the slaves on his Sabine farm, but all the details of husbandry, from the ploughing of the fallows to the reaping and threshing of the crop. Being an essentially practical nation, the Romans largely improved on the plough, adding to it the colter and mold-board.

Among the American aborigines the plough was almost unknown, though the Peruvians practiced a rough kind of ploughing, which consisted in the dragging forward of a sharp-pointed stake by six or eight men, its sharp point, which was in front, being kept down in the ground by the pressure of the foot

of another man, who directed it. Britain and America and their colonies are the



GATHERING WHEAT IN INDIA!