

or less time to some occupation by which he can gain a livelihood.—*American Machinist*.

We fully coincide with the above criticism quoted from the *American Machinist*, and remark that so far as the horological jewelry and silverware trades of this country are concerned, while their artisans have lacked almost all of the ordinary means of technical education in their various trades, having no organizations, schools, libraries, or historical past with its "old masters" from which to draw knowledge and inspiration, they entered their own market to find it occupied by experienced and wealthy foreign competitors, while they were absolutely unknown in any other. The "absence of drive," "the taking life easy" among her law-makers and tradesmen, the nursing of pride and prejudice in trade, the catering to the trade of royalty and government "boards" has given to the busy, inventive, persistent Yankee an opportunity to catch the ear, please the eye, and favor the pockets of the general public everywhere. As a result our factories in these trades, and they are many, are busy without exception, and unless England listens to others than such "graceful" and pleasant writers than Mr. Richard Grant White, and provides more wholesome regulations for her tradesmen her manufacturing interests in the lines for which we speak, will remain in the very "unsatisfactory state" in which they are to-day.—*Jewelers' Journal*.

MICA MASKS.

A well known German manufacturer of mica wares, Herr Raphael of Breslau, now makes mica masks for the face, which are quite transparent, very light, and are affected neither by heat nor by acids. They afford good protection to all workmen who are liable to be injured by heat, dust, or noxious vapours, to all workers with fire, metal and glass melters, stonemasons, etc. In all kinds of grinding and polishing work the flying fragments rebound from the arched mica plates of the mask without injuring them. These plates are fixed in a metallic frame, which is well isolated by means of asbestos, so as not to be attacked by heat or acid. These masks allow the turning of the eyes in any direction, and, as against mica spectacles, they afford the advantage of

protection to the whole face. In certain cases the neck and shoulders may also be guarded by a sheet of cloth impregnated with fireproof material, or by asbestos sheet, attached to the mask. The interval between the mica and the eyes allows of workmen who have poor eyesight wearing spectacles, and of workers with fire or in melting operations wearing colored glass spectacles under the mask without fear of breakage of the glass, mica being such a bad conductor of heat. Where the mask has to be worn long it is found desirable to add a caoutchouc tube with mouthpiece for admission of fresh air; the tube passes out to the shoulders, where its funnel-shaped end (sometimes holding a moistened sponge) is supported. The mask has a sort of cap attached to it for fixture on the head.—*London Times*.

HOW INDIANS MAKE JEWELRY.

The California sea shell is a regular article of trade among the wild tribes of Indians on the Plains, as well as among the civilized ones. The shells are about one-fifth of an inch in thickness, five or six inches long, and 4 inches broad. They are shaped like a saucer, and the outside is prismatic, the colors often merging into blue, green, pink and gold. Near the edge the shell is very thin and delicate, but hard to break. The Indians saw it into pieces, some round, others square, oblong or pendant, and these they string together by means of wire passed through little holes bored in the pieces. Brass beads are often strung on wires, as a sort of washer, between different parts of the earring, while those suspended on sinews form the pendants. A large brass ring for the ear generally begins a Sioux earring, and to this are hung five or six pendants, made of beads, supported on wire; to these pendants are attached a cross-piece of green hide or wood, then another column of pendants. To these are hung large and small beads, then another cross-piece and next three large wampum beads, beneath which is suspended the piece of shell that gives the earring its value. A shell will make one pair of rings, and it generally costs two robes, or \$6. They are something over a foot long, and from three to four inches in breadth at their widest portion. What the ears of the Indians are made of, to withstand such a strain, is

a mystery; but pride and vanity tell the story of the savage as well as the more civilized dwellers in the cities and towns.—*Jewelers' Journal*.

FORMATION OF DIAMONDS.

We do not know in which of her laboratories or by what long process of distillation nature forms the glittering grains for which souls and kingdoms have been bartered. "Very seldom it is, and thought a miracle, to meet with a diamond in a vein of gold," says Phil Holland, translating Pliny, "and yet it seemeth as though it should grow nowhere but in gold." That was a curious philosophy, not quite extinct, which supposed itself able to guess where things should grow. In Balzac's novel, "La Recherche de l'Absolu," the same theory survives. The hero is "trying to get the Absolute into a corner" by means of alchemy. He does not quite succeed with the Absolute; but when all his means are exhausted, his crucibles cold, his furnace faded out, his friends find diamonds in the sediment of one of his alchemical messes. Diamonds really were found in gold, or at least in auriferous strata, by gold diggers on the Mudgee, in Australia. In 1829 they were found in the gold washings on the European side of the Ural Mountains. Believers in the old "sympathetic" philosophy would have had that Nature was half consciously putting forth her noblest productive energies and combining her choicest ingredients in these districts. The gold was comparatively her failure, the diamonds (people would have said) her success. And just as alchemists tried to distil out of gold, as the most perfect substance, the elixir of life, so they would naturally have tried to make diamonds out of gold. Not till early in the seventeenth century did people even guess that the diamond was an inflammable substance. "Neither was it known for a long time," says the old translator of Pliny, "what a diamond was, unless it were by some kings and princes, and those but few." As to its combustible qualities, the ancient writer flatly denies them. "Wonderful and menarrable is the hardness of a diamond; besides it hath the nature to conquer the Furie of Fire; nay, you shall never make it hot, do what you can." Yet the members of the Academy of Florence "made it hot" for the diamond in 1694