

ANIMAL FEROCITY.

The tiger has so long been deemed a beast that can only be feared and avoided, except by large parties of well armed men, that there is some sort of satisfaction in contemplating the masterly engraving which accompanies this article; and the dread grip which has seized the most terrible of marauders appeals strongly to our sense of justice. Mr. Joseph Wolf (whose genius may fairly be classed with the master spirits of animal painting, Landseer and Rosa Bonheur, although it is devoted to the comparatively humble work of drawing on wood for book illustration) has here given us a picture very characteristic of the wild animal life in the pathless jungles of the East Indies; and the powerful brute is shown in the remorseless hold of perhaps the only creature who can equal him in strength and ferocity. The elephant certainly now and then gores and tramples to death a tiger who may venture to attack him; but frequently the tiger is the master, and the bones of the "huge, earth-shaking beast,"

that hath between his eyes
A serpent for a hand,
are soon left to bleach in
the sun. The crocodile of
the East, however, is covered with an almost impenetrable armor of shell-like scales, the head being protected by a seamless horny integument; and its hold is not easily relaxed by the struggles, however powerful, of its prey. That it will ultimately tire out, drown, and devour the tiger seems probable, and although crocodiles are little likely to elicit much sympathy from the human race, it is well to know that victory will not belong to the man-eating monster.

The engraving is the work of Messrs. J. W. and E. Whymper, and is published in "The Life and Habits of Wild Animals," issued by Messrs. Alexander Macmillan & Co., London.

Diving for Drink.

One of the hottest regions of the earth is along the Persian Gulf, where little or no rain falls. At Bahrein the arid shore has no fresh water: yet a comparatively numerous population contrives to exist there, thanks to copious springs which burst forth from the bottom of the sea. The fresh water is got by diving. The diver, sitting in his boat, winds a great goatskin bag around his left arm, the hand grasping its mouth; then he takes in his right hand a heavy stone, to which is attached a strong line, and thus equipped he plunges in and quickly reaches the bottom. Instantly opening the bag over the strong jet of fresh water, he springs up in the ascending current, at the same time closing the bag, and is helped aboard. The stone is then hauled up, and the diver, after taking breath, plunges again. The source of these copious submarine springs is thought to be in the green hills of Omân, some five or six hundred miles distant.

The Richest Silver Mine in the World.

The Consolidated Virginia Mine is the most profitable in the world. During 1875 it yielded 169,307 tons of ore worth \$98 per ton, average, the total yield in bullion being \$16,731,653.43. Since December 13, last, about 600 tons of ore have been hoisted daily. As soon, however, as the connections with another shaft are complete, it is computed that this hoisting capacity will be increased to 2,000 tons per day, or ore equivalent in value to \$200,000. The superintendent of the mine says that, even under this great drain, there is enough ore in sight to last for many years. The almost fabulous amount of wealth which still lies buried, and which the drills of the miners have not yet exposed, cannot be conjectured.

Comparative Richness of Human Milk.

Mr. H. A. Mott, Jr., E.M., Ph. B., has recently read a paper before the New York Academy of Sciences, entitled "Comparison between the Milk of the African Race and that of the Caucasian." The author has conducted considerable re-

search and has made numerous analyses, the result of which goes to show that the milk of colored women is richer in milk solids than that of white females. An average of 12 analyses of negro milk give water 86.34, milk solids, 3.66; this is compared (among others) with an average of 89 analyses by Vernois and Becquérel, of white woman's milk, which shows water 88.90, milk solids 11.09. The milk of the negro appears especially rich in milk sugar, fat, and inorganic salts. Microscopically examined, the two milks are similar with the exception that the negro milk contains a larger number of globules.

A White Light for Dark Room Windows.

At the last meeting of the Ghent section of the Belgian Society, Dr. Von Monckhoven communicated a very interesting and curious fact. Having to darken a room in which to

ated again, and thus becomes impervious both to gases and to liquids. For cementing the rubber sheet, or the material in any shape, to metal, glass, and other such surfaces, the cement is strongly recommended.

The Depth of the Sea.

At the last meeting of the Royal Society, Mr. Siemens, D.C.L., F.R.S., exhibited the instrument he has devised to ascertain the depth of the sea by a new means, without a sounding line. He has worked out the requirements, starting with the proposition that the total gravitation of the earth, as measured on its normal surface, is composed of the separate attractions of all its parts, and that the attractive influence of each volume varies directly as its density and inversely as the square of its distance from the point of measurement. The density of sea water being about 1.026,

and that of the solid constituents composing the crust of the earth about 2.763 (this being the mean density of mountain limestone, granite, basalt, slate, and sandstone), it follows that an intervening depth of sea water must exercise a sensible influence upon total gravitation if measured on the surface of the sea. Mr. Siemens showed how this influence can be proved mathematically, in considering, in the first place, the attractive value of any thin slice of substance in a plane perpendicular to the earth's radius, supposing that the earth is regarded as a perfect sphere, of uniform density, and not affected by centrifugal force. It was in 1859 that Mr. Siemens first attempted to construct an instrument based on these principles. The difficulties he then encountered he has since overcome, and the present instrument is the result of his latest work. He proposes to call it a bathometer, and it consists essentially of a vertical column of mercury, contained in a steel tube having cup-like extensions at both extremities, so as to increase the terminal area of the mercury. The lower cup is closed by means of a corrugated diaphragm of thin steel plate, and the weight of the column of mercury is balanced in the center of the diaphragm by the elastic force derived from two carefully tempered spiral steel springs of the same length as the column of mercury. One of the peculiarities of this mechanical arrangement is that it is parathermal, the diminishing elastic force of the springs with rise of temperature being compensated by a similar decrease of potential of the mercury column, which decrease depends upon the proportions given to the areas of the steel tube and its cup-like extensions. The instrument is suspended a short distance above its center of gravity in a universal joint, in order to cause it



A BENGAL TIGER ATTACKED BY A CROCODILE.

dry carbon tissue, and having nothing on hand but red and green glass, and not enough of either to cover the window entirely, he used half of each, alternating it. The result was that at a certain distance from the window the red and green lights blended together and formed a white light. This white light has no action on the sensitized carbon tissue. If it should have no action on the sensitized collodion plate, it would be excellent to illuminate our dark rooms. If there should be no difficulty in procuring red and green glass which would transmit no rays having a chemical action, a window might be fitted alternately with red and green panes of small size.—*Photographic News.*

A New India Rubber Cement.

A good cement, that will render india rubber in any form adherent to glass or metal, is oftentimes a desideratum with photographers, and in the *Polytechnisches Journal* for last month there is a simple recipe given for the preparation of such a compound. Some shellac is pulverized, and then softened in ten times its weight of strong ammonia, whereby a transparent mass is obtained, which becomes fluid after keeping some little time, without the use of hot water. In three or four weeks the mixture is perfectly liquid, and, when applied, it will be found to soften the rubber. We are told that the rubber hardens as soon as the ammonia has evapor-

to retain its vertical position, notwithstanding the motion of the vessel; and vertical oscillations of the mercury are almost entirely prevented by a local contraction of the mercury column to a very small orifice. The reading of the instrument is effected by means of electrical contact, which is established between the end of a micrometer screw and the center of the elastic diaphragm. The pitch of the screw and the divisions upon the rim are so proportioned that each division represents the diminution of gravity due to one fathom of depth. Variations in atmospheric pressure have no effect on the reading of the instrument, but corrections have to be made for latitude. The instrument has been actually tested in voyages across the Atlantic in the Faraday, and the comparisons with Sir W. Thompson's steel wire sounding apparatus showed it was very reliable. The paper concluded with pointing out many ways in which the instrument might be of use; among others, was that of indicating approaching danger, if contour lines were first efficiently mapped.—*London Times.*

A SIMPLE brown dye for cloth is made of japonica, $\frac{1}{2}$ lb.; bichromate of potash, 2 ozs.; alum, 1 oz.; and water, 5 gallons. Put the ingredients in a vessel, dissolve, immerse the goods, previously wet with warm water, and simmer for three hours.