

Grease and India Rubber.

If some means could be found to prevent the action of grease on india rubber, the discovery would be hardly less valuable than that of the vulcanizing process. When india rubber is dissolved in any volatile liquid, such as spirits of turpentine or benzole, the solvent may be expelled by heat, but when it is dissolved in any of the animal or vegetable oils there is no method known by which it may be separated. India rubber is soluble in all the fatty oils, and this property interferes with its use in many places where it would be otherwise exceedingly valuable; for instance, fishermen would wear india rubber overalls in preference to any other material, were it not for the fact that they are soon ruined by the oil of the fish; and india rubber belts have been frequently brought into discredit by the circumstance of a few being injured by their careless exposure to the contact of grease.

We do not regard this field as very promising, for it has been explored by many learned chemists, and it seems to be the nature of india rubber, in all combinations and under all circumstances, to yield to the solvent power of fat; still, in organic chemistry, there is no known limit to the variety of combinations and of results.—*Scientific American*.

The Suez Canal.

The gigantic works in connection with the Suez Canal scheme are being pressed forward with a vigour worthy the undertaking. The Egyptian Government have furnished a great number of hands for the service of the company.—In fact, nearly 22,000. It must not be imagined, however, that these comparative slaves will exert themselves as would as many English or French labourers. The intention is to employ, indeed double that number, if they can be got from Egypt. At present the work is almost exclusively concentrated upon the cutting to be made upon the sand heights of El Djiser, and the engineers promise that what they call the *rigole de service*, or elementary canal, shall within the next two months carry the waters of the Mediterranean into the basin of Lake Tismah. This canal, or cutting, as we should prefer calling it, will be about 15 feet wide, and 18 inches deep. Some twenty dredging machines are to be employed in clearing out a channel, which, completed last year, has realized the prophecy of the late Robert Stephenson, and has now become choked by sand. There is no doubt that the company have undertaken a task which it will require all the talent of their engineers and all the muscular force of their 40,000 assistants to accomplish.

The Eye Photographed.

At the meeting of the American Photographical Society last February, Dr. Henry D. Noyes exhibited a negative showing the optic nerve and interior of a rabbit's eye. The impression was obtained by a newly invented instrument devised by himself and Mr. Grunow, a practical optician. Such a photograph has never been obtained before in this country, although it is said to have been done in France. The interior of the eye, namely, the retina and optic nerve, has been disclosed to observation in the living person, by an instrument invented in Germany, called the ophthalmoscope. This has been

in use for ten years, but it is only now that the interior of the eye has been photographed. Dr. Noyes explained the working and principles of the new ophthalmoscope, by the aid of diagrams and the presentation of the instrument itself. Through it diseases of the eye can be studied with greater facility, and scientific records of them kept. The instrument displayed, in its elegant and finished workmanship, the highest mechanical skill. The discourse of the doctor was listened to with close attention, and the audience expressed their approbation by applause.

Canadian Mica.

The value of Mica depends upon the size of the sheets and their transparency; the clear, ruby-tinted being the finest, and the cloudy grey the least valuable. With regard to the mica from British possessions, it appears that the sale of Canadian has been much damaged through the carelessness of those shipping it. The first parcel, of about $\frac{1}{2}$ ton, which Messrs. Nash and Liénard received was sold at 2s. 1d. per lb.; and the second, of about $\frac{1}{4}$ ton, realised 2s. Since this the quality has not been kept up; the third parcel, of about 1 ton, required careful sorting after arriving in this country, to render it marketable at all, and then sold one-half at 2s. and the remainder at 7 $\frac{1}{2}$ d., the nett amount cleared and remitted to Canada being only 144*l.*, or about 1s. 1d. per lb. The same firm has since undertaken to import mica from Calcutta, and the quality is so much superior to that from Canada that the latter is now saleable only at a very low price. The Calcutta mica is indeed, about equal to that from Siberia, and is at present readily saleable at from 2s. 6d. to 4s. per lb. according to quality, and the quantity taken. Owing to varying quality the price of mica varies considerably: Canada mica will range from 3d. to 2s., and Calcutta from 6d. to 4s., per lb.—*Mining Journal*.

Cog-Wheels Superseded.

A new system of transmitting power from a horizontal to a vertical axis, without cog-wheels, is exhibited by Messrs. Fontainemoreau and Gilbre, of Finsbury, in the western annexe. The machine is the invention of Mr. L. Thirion, of Belgium, and consists of a helicoidal spring, having two axes at its two extremities. If these two axes are placed in a relative position with regard to one another, so as to make either a right acute or obtuse angle, and if motion is given to one of them by means of a crank arm, water wheel, or steam-engine, the motion will be transmitted to the other axis without noise or shock, and only with the friction of the bearings. The power transmitted by this means is, therefore, limited only by the strength of the bars composing the springs. The inventor has successfully applied this new power to a windmill having no cog-wheels, and which is composed of a hollow wooden or iron upright, on the top of which is placed a flexible spiral spring with its two axes, one of which passes through the standard and the other rests on a support forming the vane of the mill. By the aid of this invention motive power may be secured continuously, and at a very slight expense.