

## TRANSIT OF VENUS.

We reproduce on page 263, for the benefit of our readers, the first of one or two articles on the approaching transit of Venus which have just appeared in the *Engineer*. The phenomenon is occupying the attention of all scientific men just now to a great extent and the results of the expeditions now being fitted out by England, France, Russia and America are looked forward to with intense interest. The question, as the writer states is, not merely a theoretical astronomical problem, but is one with practical application to the very geography of our earth. The importance with which it is regarded by men of science may be gathered from the fact that preparations have been making for the coming observations during the past half century. That the results may be expected to be as correct as possible may be argued from the friendly scientific co-operation and rivalry of the leading astronomers of the leading nations of the earth.

We are compelled, from want of space, to defer our descriptions of the New City Hall at Montreal and of the Birmingham Aquarium until next month.

## REVIEWS.

THE AMERICAN ARTISAN. Brown and Allen, New York.

We have been compelled by force of circumstances, which have somewhat delayed our publication, to postpone noticing the recent change in this very interesting and ably conducted journal. The present volume appears in monthly numbers instead of weekly as before. We cannot say we are altogether pleased with the change since the oftener we see such a journal the better. The monthly, however, is much larger and shows, if possible, more care than ever, especially in the matter of the engravings which are of a very high degree of excellence. The cover is ornamented by a spirited engraving of a prominent figure in which is a view of the celebrated East River Bridge as it will appear when completed. The *Artisan* constitutes now a monthly magazine of undoubted scientific ability and is at the same time a journal which few, if any people, can read, in these days of universal education without intense interest.

We congratulate the publishers on the typographical beauty of their publication and wish the *Artisan* every success in its new form.

HOW TO MAKE MONEY BY PATENTS: by Charles Barlow. London, E. Marlborough & Co.

We have just received the third edition, recently published, of this work. It is not very long since we referred to the former edition as a work of great practical value to inventors and patentees, and the fact that a new edition has been called for proves that its usefulness is being realized. The work is replete with useful hints and suggestions, and contains moreover some very sound advice to inventors on subjects on which they are apt to go somewhat astray. As a guide in securing patents it will be of greater service to English patentees than to Canadian ones, but even to the latter it cannot fail to be of service sometimes, and the general truths as to the disposal of patents, &c., are of universal application and are put forth in the clearest and most forcible manner by one who is an authority on the subject.

## GOLD MINING ON LAKE SUPERIOR.

We condense the following from a report, in the *Toronto Globe*, of a paper read before the Canadian Institute by Mr Peter McKellar.

The general characteristics of the Huronian slates of Lake Superior resembled those of the most gold bearing formations of the world so much that I invariably looked for gold whenever I came across veins in them, but always failed until the summer above mentioned. The excitement caused by the Silver Mines of Thunder Bay spread amongst the Indians, who also began to look for metalliferous veins, by bringing specimens from every white rock that they could come across. Two of these, J. Baptist and M. Puchar, who were in the employ of the H. B. Co., under Mr. Neil Whyte, of the Beau Blanc Post, one of which showed the ores of lead, copper, and iron, which are very common in the veins near the coast, but not in the old rocks back. Mr. Whyte sent the specimen to Fort William in the winter of 1870-71 to show them to me to see if they were of any value. Mr. John McIntyre, of Fort William, got the Indians to bring in more specimens, and some of the wall rock which was talcose slate. From the appearance of the vein-stone and slate I felt confident that the vein did carry gold, although the specimens did not show any; so Mr. McIntyre sent two of the Indians along with me to show it. We started in July, 1872, following the Dawson Road a distance of 45 miles, to Lake Shebandowan, where we procured a canoe and provisions for the rest of the journey, which was 30 miles by water, to bring us to the next end of the lake; then, according to the Indians' calculations, 25 miles to the vein, by portages, small lakes, and streams, which afterwards proved to be only 12½ miles when the road was cut out and measured.

On reaching the place I commenced my examination, and was soon rewarded by finding the free gold in the form of thin leaves coating the bitter spar. At the point of exposure the lode is running along in the face of a steep hill, and large blocks of the vein rock had fallen down, making it appear to the Indians to be running at right angles to its real course, therefore they were unable to trace it up or find it in any other place. Before leaving for Thunder Bay I traced the vein by its outcrops for about three-quarters of a mile, finding it of similar character throughout.

The rock formation consists of the usually fine textured, greenish slates of the Huronian series—such as dioritic, chloritic, talcose, silicious, and fine grain micaceous slate, interstratified with beds of ferruginous quartz and magnetite iron ore. These magnetic beds are from 20 to 150 feet in width and show a ribbon-like structure, being interlaminated with layers of quartz, and can be traced for miles along their strike, no doubt the time will come when some of them can be worked with profit. The rock on either side of the lode for some distance is composed of the greenish slates, talcose, chloritic, and dioritic, with the massive dioritic and iron ore beds, while to the north-west of the lode, about a mile, lies a great thickness of the above-mentioned micaceous slates, which are dark in colour, and in places pass into clay slate, showing a transverse cleavage. These are cut in every direction by masses or irregular veins of quartz, which appear to belong to the gash-vein system. Again, to the south-east, some two miles beyond the vein, are developed great thicknesses of greenish-white, silicious, slate conglomerates. The whole of these slates seem to lie conformably on one another, dipping to the N. W., at an angle of 50° to 80°. About three-fourths of a mile to the N. E. of the vein lies the Jack-fish Lake, which is over a mile and a half in length. Its bed is worn out of massive reddish granite which must have been forced up through the above mentioned slaty strata, as we find it displaced and altered in appearance next the granite. In coming from the S. W., we find that the slates within half a mile of the Lake change in their strike from E. N. E., around to the N., and then to the N. N. W., the angle of dip increasing with the change of strike from 50° until it has reached the vertical, then after passing the broadest part of the granite, west of the Lake it again changes and gradually gains its original dip and strike. To the south-east side of the granite and Lake, the change in the strike of the slates is light, but their dip is nearly vertical, besides they are changed into a sort of gneiss for some distance from the granite. The general width of this igneous belt of rock is one half to three-fourths of a mile. It extends north-eastward for many miles, intersecting the strike of the slates at a small angle. On Jackfish Lake, where it terminates