THE INSTRUCTOR.

No. XXX.] MONTREAL, NOVEMBER 28, 1835. [PRICE 2D.

ASTRONOMY.

ASTRONOMICAL CALCULATION.

(Continued from page 222)

It should be observed, that if the parallax, and consequently the distance of any one of the planets, by any means becomes known, the same is easily obtained for each of the other planets, from the relation which has been clearly discovered to subsist between the periodical times of revolution of the planets round the sun, and their distances from that central luminary. Astronomers have most decidedly proved that the square of the time in which any other revolves, as the cube of the distance of the first, is to the cube of the distance of the other; and since all the times are known from observation, if the distance of any one be determined, there is no difficulty at all to find the distances of all the other planets from the sun.

It has also been matter of great surprise to the unlearned, that astronomers should pretend to tell the magnitudes of the sun and planets. But this is no difficult problem when the distance is known. The APPARENT diameter is readily found from observation, and on this and the distance depends the TRUE diameter. If the apparent diameters of two objects be equal, the true diameter of the one will be greater as it is more remote; and the apparent diameter of any object will increase as the distance of it from the observer diminishes. From this every one sees, that a knowledge of the distance of the object is an indispensable element for finding its bulk: and, according to the accuracy of the measure of the distance, will be that of the measure of the magnitude, provided the apparent distance be truly taken; and this, in the present improved state of our instruments, presents no obstacle. There can be no doubt but that astronomers are very near the truth in the numbers which they now give us for expressing the distance and magnitudes of the sun and planets.

The telescope has been of singular use to the astronomer: it has shown him many phenomena of the heavenly bodies, concerning which he would otherwise have been totally ignorant. It is by the assistance of this noble instrument that we have attained to the knowledge of the rotations of the sun and planets, the phases of Venus and Mercury, Saturn's ring, and many other particulars exceedingly interesting. The telescope has discoverrd several planets which otherwise would have revolved in their course unknown and unnoticed by the inhabitants of the globe; it has informed us that several of the planets have moons moving round them, as our moon revolves round the earth; besides, it has presented to our view an innumerable multitude of fixed stars which without this assistance we should never have seen.

It is no wonder that great efforts have been made to improve this excellent instrument: these efforts have been attended with great success, and what may be further done in this respect we cannot tell; however, there is a limit to the improvements of the telescope, for after it has attained a certain degree of magnifying power, the motes and vapours in the atmosphere would be so magnified as to occupy its whole field of view, and thus render it an useless incumbrance.

TRAVELS.

GUEVO UPAS, OR POISONED VALLEY.

This is a small valley in the island of Java, and is particularly remarkable for its power of destroying, in a very short space of time, the life of man, or any animal exposed to its atmosphere.

It is distant only three miles from Batur, in Java; and on the 4th July, 1831, Mr. Loudon, with a party of friends, set out on a visit to it. Following a path which had been made for the purpose, the party shortly reached it, with a couple of dogs and some fowls, for