

then were about to punish him as a sorcerer, when the dervise with great calmness said :

" I have lived long in a desert. I knew that I had crossed the track of a camel that had strayed from its owner, because I saw no mark of any human footstep on the same route ; I knew that the animal was blind in one eye, because it had cropped the grass only on one side of its path ; and I perceived that it was lame in one leg from the faint impression which that particular foot had produced upon the sand ; I concluded that the animal had lost one tooth, because wherever it had grazed a small tuft of grass had been left uninjured in the centre of its bite. As to the burden of the beast, the busy ants informed me that it was corn on one side, and the flies that it was honey on the other.

PHYSICS.

WEDNESDAY, JUNE 14TH :—3.30 TO 5 P.M.

1. Distinguish between molecular forces and molar forces, and give an illustration of each.
2. Describe (making a drawing) the action of the ordinary air pump.
3. State the three laws of motion, and illustrate *one* of them.
4. If a coin is dropped from a balloon one mile above the earth, for how many seconds will it fall, and what will be its final velocity ? (Make no allowances.)
5. Define energy. Distinguish between *potential* and *kinetic* energy. A body weighing 25 lbs. is thrown vertically upward with an initial velocity of 30 ft. per second. Calculate its energy. Find the height to which it will rise.
6. Distinguish between conduction of heat and convection of heat, and describe an experiment to illustrate each.
7. What is meant by *absolute temperature* ? How is absolute zero determined ?