for, of course, when you face the pole-star, the north lies before you, the south behind you, the east on your right, the west on your left.

But to find the pole-star, it is well to begin with the dipper. This well-marked group includes two stars which are called the "pointers," because they point to the pole-star. The dipper is so conspicuous and well-marked a group that it is easily learned and cannot easily be forgotten. Although not very near the pole, it is yet not so far from it as to range very widely over the heavens; and if you look toward the north at any hour of any clear night, you will seldom require many seconds to find the familiar set of seven bright stars, though at one time it is high above the pole, at another close to the horizon, now to the right of the pole, and anon to the left. In England the dipper never sets; in America it partly sets, but still can be recognised (except at stations in the most southern States) even when partly below the horizon.—*Prof. R. A. Proctor, in St Nicholas.*

Influence of Alcohol on the Circulation.—Dr. Richardson, in answer to a question put by the Ladies' Convention recently in London, says:—The effect of alcohol on the circulation of the blood is to quicken the circulation. The heart beats more quickly after alcohol is imbibed; the vessels of the minute circulation are dilated, and, at the same time, are reduced in their contractile power. A moderate degree of cold applied to the vessels of the body produces the same effects, and hence cold and alcohol go hand-in-hand together in producing torpidity and general failure of vital activity. During the time when the heart is beating more quickly, and the blood is coursing more rapidly through the weakened vessels of the vital organs, a flush or glow is experienced which, in time, becomes a sensation, if not of pleasure, at least of excitement. By continued use of alcohol, the vessels lose their control, and the heart fails in its power unless the stimulation be renewed. At last the sense of want of power and of languor, when the stimulant is withheld, is transformed into what is conceived to be a natural necessity. The weakened stomach yearns first for what is called its stimulant, and then the languid body craves, in response, for the same. But the rapid course of the circulation leading to the increased action of the vital organs is, after all, the rapid running out of the force of the body. It is like the rapid running down of the timepiece when the pendulum is lifted. The running down demands, in turn, the more frequent winding up, and the result is premature wearing out and disorganization of those organic structures on the integrity of which the steady maintenance of life depends.

During these unnatural courses of the circulation under alcohol, the degrees of structural change which occur are most serious. The minute blood-vessels are rendered feeble, irregular in action, untrue to their duty. The membranes of the body become changed in structure. The organs that are most necessary for life, such as the brain, the lungs, the liver, the kidneys—organs which are failures unless their membranes and their vascular parts be kept intact—lose their power for work, and from their defects disease, in tangible form, is organically developed.

Another cause of feebleness from alcohol, indirectly connected with the circulation, is the change to obesity which alcohol produces. It is one of the effects of alcohol to check the natural process of oxidation in the body, and for this reason, as I have experimentally proved, it reduces the animal warmth. The influence of this repression does not end here: under it there is an impaired nutrition, and in many instances a great and unnatural increase of fat in the body, what physicians call fatty change or fatty degeneration. In the beginning of this change it is usual that the fatty substance is laid up outside and around the vital organs, or beneath the skin, where it is stored away in great abundance. In later stages, and occasionally from the first, the fatty particles are deposited within the minute structures of organs, in the muscular structure of the heart, or in the substance of the brain or kidney. The fatty degeneration, in this manner induced, is, of necessity, a permanent cause of feebleness, of premature decay, and, not unfrequently, of sudden death.

A Wonderful Instrument.—Probably no instrument yet invented has caused or is likely to bring about so entire a revolution in scientific thought as the prism. Discovered by accident, improved by degrees, it has changed the whole current of astronomical and chemical research, and to-day the three-cornered piece of flint glass which decomposes light is the most valued because the most potent adjunct to the laboratory and the observatory. Who shall fortell the discoveries to which the spectroscope may lead? A ray of light from the sun, passing through its centre, and thence thrown upon a screen, tells of truths and marvels which had else been forever beyond our ken. That broad, gaily-colored band which we call the solar-spectrum, with its brilliant yellow sodium lines, and its green of thallium, its dark red and purple streaks of potassium, and its wondrous blue of rubidium, teaches us the grand lesson that in the sun all these metals and many more are incandescent and glowing, and that, united together in one vast blaze, they endow this little planet of ours with all the light and heat which make life joyous and glad. Or, penetrating the vast abyss of the stellar depths, it shows us Sirius enveloped in flames of sodium, magnesium and hydrogen; while farther yet afield, embracing the great Aldebaran itself, centre of the universe and guiding star, it reveals to the astonished eye the wondrous fact that, just as in this terrestrial sphere, so countless myriads of miles away, burn hydrogen, sodium, bismuth, iron, magnesium, mercury, and many other elements, each fulfilling its part in the economy of nature, and assisting to prepare the vast ball of fire to which it belongs for the destiny that awaits it. And though the brain may even whirl as it strives to contemplate the distant nebulæ which neither eye nor teloscope, be it ever so powerful, can resolve in the far-off space of heaven, the spectroscope seizes upon them with undiminished power, and decomposing their feeble, trembling light, tells us of the existence of hydrogen and nitrogen in regions incalculably distant, and of which the mathematician has no conception. It goes farther even than this, for, with a certainty which cannot be surpassed, it classifies the stars, and gives to them all their age, placing the white, or those most redolent of hydrogen, in the foreground, as the youngest and most recently incandescent; ranking the yellow, such as our sun, Aldebaran and Arcturus, as the more advanced in chemical decomposition; while it demonstrates that the colored stars, which give off the spectra of metals, and show channelled spaces like the lines of compounds, are those which, having been acted upon by intensest heat, are gradually cooling