

hardness 7 to 7.5. In composition tourmaline is a boro-silicate of alumina and magnesia, with a small and varying amount of other metals. Most varieties fuse to a blebby glass before the blowpipe; not decomposed by acids; becomes electrified by heating. Thin transparent plates are used for polarizing light. The transparent varieties, free from cracks, are valued as gems; the finest ones in the world have been found in Paris, Maine; within a few years, \$60,000 worth have been found in that place. *Rubellite* is a name given to the red tourmaline; and *Indicolite* to the blue.

transition between these magnitudes, an arbitrary division has been agreed upon for the convenience of astronomers. Twenty (20) are classed as first magnitude star, 65 as second magnitude, 200 as third, 450 as fourth, 1100 as fifth, and about 4,000 as sixth. The number of telescopic stars is much larger being reckoned by some authorities as high as 20,000,000.

CONSTELLATIONS.

As many of the stars appear in groups more or less symmetrical, these groups from remote antiquity have received such names as their fancied resemblance to some personage or animal would most readily suggest. The term *constellation* is of comparatively modern origin, from *con* together and *stella* a star. These groups now number 109, 50 of which were outlined and named by the ancients. The whole expanse of the heavens is now mapped out into these 109 divisions, and every star is included in one or other of them. For convenience of reference, the individual stars of a constellation are designated by letters or numerals, the stars being lettered in the order of their brightness. For this purpose the Greek alphabet is used; after that is exhausted, the Roman, after that, numbers. Each of the constellations has a Latin as well as an English name, and to designate a particular star, the genitive of the Latin name is used after the letter. Thus the two brightest stars in the constellation Orion are called *alpha orionis* and *beta orionis*. In addition to this mode of designation, many of the stars, especially the brighter ones, have names which have been given to them as individuals, and not as members of constellations. Thus Alpha Lyrae is called *Vega*, Alpha Leonis, *Regulus*, Alpha Canis Majoris, *Sirius*, Beta Orionis, *Rigel*, Gamma Orionis, *Bellatrix*.

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THE STARS.

No. I

It has been thought advisable, now that the Postal College and its exponent, the CANADIAN SCIENCE MONTHLY, are entering upon an enlarged field of usefulness, to give in this department a series of papers on the stars, with a special reference to their grouping into constellations.

The number of stars visible to the unassisted vision on a clear night is about 3,000. The opposite hemisphere containing as many more makes the number that can be seen without a glass about 6,000. These are divided according to their apparent brightness into six classes, called respectively, 1st, 2d, 3rd, 4th, 5th, and 6th, magnitudes. Stars so remote as to be invisible to the naked eye are called telescopic stars. These are classified as far as the fourteenth or higher magnitudes. There being, of course, no abrupt