found, which being subtracted from 90° will give the altitude above horizon at the hour required.

ANSWER.—The sun is in the southern solsticial colure in the beginning of *Sagittarius*, and the distance of *Andromeda* from the zenith of Toronto was  $51^{\circ}$  with an altitude of  $39^{\circ}$  above horizon.

## PROBLEM VI.

What is the position on the sphere of that beautiful double star *Beta Cygnus* (Alberio), in reference to its zenith arc, and altitude from horizon, likewise its distance from the meridian as seen at Philadelphia High School Observatory on June the 25th, at 9h. 8m. p.m., also when did the star rise and set at the time given ?

RULE.—Place the sun in the ecliptic plane at the day June 25th, next screw quadrant over Philadelphia, latitude 39° 58', then place the quadrant over the star and note the degree. The degree points out on quadrant the zenith arc at the time; subtract the arc found from 90° and the altitude is given. To find when *Alberio* rose and set to Philadelphia move the terrestrial meridian west till the quadrants end just touches the star; the index on the hour circle shows when it rose; and by moving the meridian and quadrant east till the quadrants end again touches the stars and the index place will solve when it set.

ANSWER.—The zenith arc of Alberio at 9h. 8m. p.m., was 51° 30', and its altitude above horizon 38° 30', and the star rose that day at 5h. 20m. p.m. and it set at 9h. 12m. a.m. next morning. Also the arc of Alberio at 9h. 8m. p.m. was 60° 8' east from meridian of the School Observatory.