L C *d* is equal to the whole angle L B *a*. In the triangles *d* C L and *a* B L, *a* B and B L are equal to *d* C and C L, and their contained angles equal, by (4.1), *a* L is equal to *d* L, and the angle B *a* L equal to the angle C *d* L, by (13.1), the angle *r a b* is equal to the angle *l d c*. In the triangle *r* L O and *l* L O, the three sides of the one are respectively equal to the three sides of the other, by (8.1), O *r* L is equal to the angle O *l* L, and the angle *r* O L equal to the angle *l* O L; by (15.1) the angle *a r b* and *d l c* are equa but it has been proved that the angle *b a r* is equal to *c d l*; therefore (32.1), the two triangles are equiangular, and *a r* equal to *d l*; therefore, by (26.1), *a b* is equal to *c d*, but *a* B is equal *d* C; therefore *b* B is equal to *c* C. Then, in the triangles *b* B O and *c* C O, we have *b* B and B O equal to *c* C and C O and their contained angles equal, by (4.1), the angle B O *b* is equal to the angle C O *c*. Then, as in the first demonstration it may be proved that each of these angles, is equal to the angle *b* O *c*; therefore the three angles B O *r*, *r* O *l*, and *l* O C, are equal, and the angle B O C is trisected.

THIRD DEMONSTRATION.

Join B *l* and C *r*, cutting O *l* and O *r* in *n* and *m*. If on O B we describe a semicircle, it passes through the point *m*; therefore (31.3), the angles at *m* are right angles, and (3.3) B *l* is bisected perpendicularly by O *m*; hence B *m* and *m* O are equal to O *m* and *m l* and the angles at *m* equal, by (4.1), the angle B O *m* is equal to the angle *l* O *m*. This may also be proved by letting fall a perpendicular from O, on B *l* and this perpendicular always falls on the point *m*; then we have two straight lines which coinside in part they must coinside throughout the whole (Legendre, Prop. 2). It