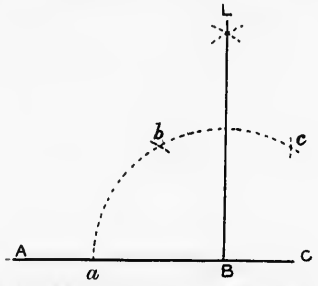
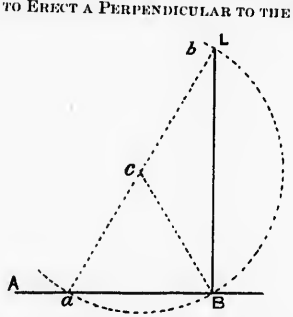
PROBLEM 4 (a).—From a Given Point **B** in a Straight Line **A C** and Near One End of it, to Draw a Perpendicular to the Given Line.



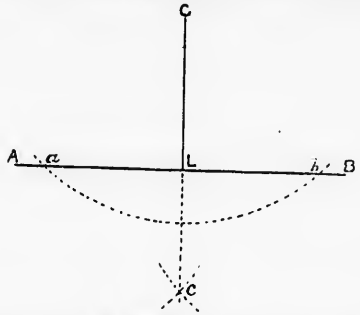
From the point **B**, describe any arc **abc** and from **a** describe with a radius **aB** an arc cutting the former arc in **b**, and from **b** with the same radius, again cut the first arc in **c**.
From **b** and **c** with any radius, describe two arcs meeting in **L**.
The straight line **B L** will be the required perpendicular.

PROBLEM 4 (b).—From a Given Point **B** at the End of a Line **A B**, to Erect a Perpendicular to the Line.



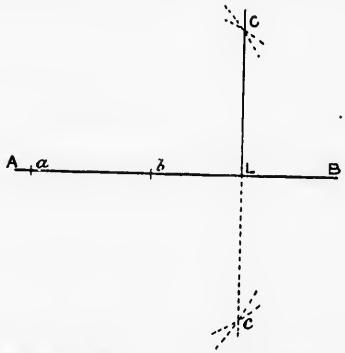
Take any convenient point **c** away from the line, and with radius **c B**, describe the arc **a B b**.
Join **a c** and produce it to cut the arc in **L**.
The line **L B** will be the required perpendicular.

PROBLEM 5.—From a Given Point **C** Without a Given Line **A B**, to Draw a Perpendicular to the Line.



From **C** as centre, describe an arc cutting the line in the points **a** and **b**,
From **a** and **b** as centres, with a suitable radius, describe arcs cutting each other in **c**
Join **C c**, cutting **A B** in **L**. **C L** will be the required perpendicular.

PROBLEM 5 (a).—From a Given Point **C** Without a Given Line **A B** and Near One End of it, to Draw a Perpendicular to the Line.



From any point **a** in the line, with a radius **a C**, describe the arc **C c**.
From any other suitable point **b**, with radius **b C**, describe a second arc cutting the former in the points **C**, **c**.
Join **C c**, cutting **A B** in **L**. **C L** will be the required perpendicular.