the original lines, completing the parallelogram; and suppose all the lettered points of the figure rigidly connected.

Then, since the two forces represented by AA_1, AB, acting at A, are equal, the direction of their resultant bisects the angle between them, and it therefore acts in AB_1: it may then be supposed to act at B_1 (§ 9), and may there be again resolved into its original components, which will be represented by BB_1 and A_1B_1, of which the former may act at B, and the latter at A_1.

Proceeding in the same way with this latter force, A_1B_1, at A_1, and the force A_1A_2, which we may also take to act at A_1, we can replace these by B_1B_2 at B_1, and A_2B_2 at A_2.

Proceeding in this manner we arrive at last at B_p, where we find the force A_pB_p and the set of forces BB_1, B_1B_2, B_2B_3, ... (which latter make up the original force p) as the equivalents of p and AB at A.

Now taking up the set of forces in BB_p and the force represented by BC at B, we transform them by the same process into B_pC_p and the set in CC_p at C_p.

Following this method we arrive at last at L_p, where we have for the equivalents of the original forces the sets of forces in LL_p and A_pL_p, which may be supposed all to act at L_p and their magnitudes are p and q. Hence we have transformed the original forces p and q acting at A to the same forces acting at L_p in parallel directions to the former, and this without alteration of their statical effect. Hence L_p must be a point in the direction of the Resultant of the original forces at A; that is AL_p is the direction of the Resultant, which proves the principle enunciated, so far as the direction of the Resultant is concerned.