

radius turning about the point of gyration whilst being impelled forward, we see that the atmospheric resistances at different parts of our radius are unequal, at one extremity being equal to the resistance due to the flight of the ball, plus that due to the velocity of rotation, whilst at the extremity situate at the point of gyration it is merely equal to that due to its flight; dividing our radius equally at the point that will coincide with the centre of gravity of the ball, which we will now suppose contains this radius as a diameter; we have two levers of equal length on which the atmospheric resistances are unequal, and of such a nature that we can represent their effect by supposing a single force as acting on the extremity next to the point of gyration in opposition to this tendency, equal in amount to half the difference of the total resistances on each of our equal levers. The result of this will be the conversion of the gyratory effort into

an impelling force, for the lost motion in one direction must be apparent in the other, as none of it has been absorbed by the atmospheric resistance occasioned by the flight of the ball, as that, whether the ball is gyrating or stationary, is equal in both cases and follows the same law.

We can therefore see, how, if a golf-ball or any spherical projectile in its flight gyrates about any point other than its centre of figure and gravity, in any plane other than one at right angles to the line of its flight, its path will be that of a curtate-cycloid, modified in so far that instead of being described off a fixed plane, it is described from the parabolic curve of its apparent line of flight, and how, the forces expended in developing the true path are converted without practical diminution into a corresponding one in the direction of the line of flight, which will result in a sensible increase in its velocity as at first stated.

SALTLEY TRAINING COLLEGE.

THE Archbishop of Canterbury took for his text Romans xii. 7, "He that teacheth let him give himself to his teaching," and his remarks were addressed specially to the students present. He said the cry to the teacher now was as it had been in no time or place before. The voices of the world and of the Church were making themselves heard in stronger tones than usual, and to teachers he thought these voices spoke with special distinctness. A new and a very vast class was at the present moment giving an operative opinion on very wide questions, social and political, and who could estimate the greatness of issues hanging on their opinions? Those voters had, almost without exception, passed as individuals under

the hands of the predecessors and compeers of the students now in college, and their children and those who would take their places and inherit their influence and power, at least for some generations to come, would be chiefly formed and moulded by the present students and the great body to which they belonged. These children were committed to them by the world and by the Church for this purpose, and how did they estimate, and how were they prepared to exercise their trust and their responsibility? The Church placed all trusts and all responsibilities on their true level. She was not indifferent to the world's interests; she was most keen concerning the stages of the world's progress, recognizing them as part of the