

THE PHYSICS OF THE BICYCLE.
 —When a wheelman is moving forward on a bicycle, what keeps him up? is a question often asked, as the rider passes swiftly along on a wheel base practically without width. Sitting on a still wheel is an almost impracticable feat; but it is simple enough to maintain an upright position when moving at a very slow speed. It is a physical fact that a body in motion persists in maintaining its plane of motion, and unless some additional force acts on the body at an angle to the original line of motion, it will continue to move in its original plane until stopped by friction or arrested by an obstruction. A body set in motion tends to move in a straight line, and will do so unless affected by a force acting on it

in a different direction from that of the first movement. A wheelman is propelled through space at a velocity sufficient to cause him to maintain his plane of movement. Should he desire to change this plane of motion, as in describing a curve, he can do it only by calling in the aid of gravity; *i.e.*, he must lean to the concave side of the circle, more or less, according to the radius of the curve he is following. And further, in describing a curve, he is impelled outwardly by centrifugal force, which is more or less according to his velocity, and he must oppose this force by a centripetal force, which in this case is gravity. This he does also by inclining his body toward the centre of curvature of the path he is describing. In this case the wheel sometimes

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