

## EQUESTRIAN PHILOSOPHY.

DEAR MR. PUNCH,—Having been long earnestly engaged in the study of mathematical science, and being fond of riding, two pursuits usually thought incompatible, I have been enabled by this singular union to strike out some important discoveries in both branches; the mathematical improvements in riding will, I hope, deserve your attention, as I expect that you will be called upon this summer to show some rare specimens of horsemanship.

My love for equestrian agitation is, I believe, more general than that of any other person; for whatever satisfaction may be experienced by riders while they continue on the backs of their horses, I have never yet met with one who received any sensible delight from the circumstance of being violently projected from the saddle. But here, Sir, from my passionate fondness for the mathematics, I enjoy a manifest advantage. From the concussions, repercussions, and every other kind of compound motion which can be generated consistently with the due proportion of the centre of gravity, I enjoy, I will venture to say, at least as much satisfaction as any other rider; and at the time of being thrown off, or in more proper language, projected from the horse, I experience a peculiar delight in recollecting that by the universal laws of projectiles, I must in my flight through the air describe that beautiful conic section—a parabola.

After some accidents of this nature, I have been fortunate enough, notwithstanding the violent reaction of the ground in consequence of the strong action of my skull against it, to preserve my sense sufficiently to be able to ascertain the curve so generated by my body, to describe it on paper and demonstrate its peculiar properties; and I am not without hope, if I can meet with horses not too sure footed, by frequent experiments to determine what kind of parabola it is safest to describe; which problem will, I apprehend, be found very serviceable in practice this summer.

Not long ago, by a particular convulsion of the animal, from which I was so fortunate as to fall, I was very irregularly thrown to the earth, but had the satisfaction afterwards to discover that the curve described was the segment of a very eccentric ellipse, of which the saddle was one focus; and that it was nearly, if not exactly, the same with the path of the comet now expected to return. And once, by suceasation still more anomalous, I was happy to describe a new curve, which I found to possess some very amazing properties; and I hope effectually to immortalize my own name by calling it my first Hippopiptic Curve, (Hippopiptic expresses the mode of the curves' generation in falling from the horse—from *Hippos* a horse, and *pipto* to fall; I call it the first, because I hope by the same means to discover more hereafter.) The first equestrian problem that I ever set myself to discover was this—when you pull the reins to prevent a horse from falling, where is the fulcrum or prop—and how is the horses' centre of gravity prevented from being thrown beyond the base of his legs. I will not trouble you now with the particulars of this difficult investigation; but shall only say that it turned out greatly to the honour of demipique saddles which, accordingly, in the mathematical elements of riding, that I mean hereafter to publish—I shall recommend very strongly in a corollary.

A learned student in mathematics has long published his ability and desire to construct breeches upon geometrical principles—the man is certainly ingenious, and a few salient angles excepted, admirable—but the artist who should make bridles, saddles, and other equestrian paraphernalia, by the rules of pure mathematics, would render a much more praiseworthy service to the public. For if the flimsy leather of breeches require geometrical cutting, how much more necessary must it be to the tough hide which forms the bridle; and to what purpose will the geometry in the breeches operate, if the saddle by which they are supported, and whose superficies they are to touch in as many points as possible, be formed ungeometrically. But I forbear to expatiate on a matter as an axiom in Euclid, trusting that whoever can perceive the utility of geometrical breeches, will readily argue a fortiori, to the absolute necessity of geometrical saddles and bridles. Pursuing my principles, I have demonstrated what is the right line to be drawn by the mathematical rider in every difficult situation. In ascending a horse's back, at what angle to extend the moveable leg, while the fixed one is rested in the stirrup in leaping; how to regulate the oscillation of balancing of the body, by attending carefully to that funda-

mental point which is your centre of motion; in starting how to dispose of the superfluous momentum, and thereby to preserve in full force the attraction of cohesion between rump and saddle; in rearing at what angle, formed by the horse's back with the plane of the horizon, it is most advisable to stride over his tail, which I maintain, is the only expedient that can be practised with a mathematical certainty of being safe;—these and many other important secrets, I am ready at any time when called upon to communicate. One I cannot even now withhold, which is this—that there is no good or truly geometrical riding, unless the legs be extended perfectly in straight lines, so as to form tangents to the cylindrical surface of the horse's body; in a word, to resemble as much as possible a pair of compasses set astride upon a telescope, which I conceive to be the perfect model of mathematical riding. But besides this application of pure geometry, it has often struck me that too little use is made in riding, of the principles of mixed mathematics. Consider, dear Sir, the six mathematical powers—the lever, the wheel and axle, the pulley, the inclined plane, the wedge and the screw; and reflect with what advantage all these may be applied to the uses of horsemanship. By means of a lever, having an elevated fulcrum raised in the pommel of the saddle, an entire stop may be put to the practice of falling, except where the practitioner should voluntarily take a tumble for the express purpose of studying the parabola or hippopiptic curve. The wheel and axle is already applied to the use of horses, though not in any branch of horsemanship, except the driving of post carriages; but is also found so efficacious in preventing falls, that where a horse has been used to that assistance, it is not reckoned safe to ride him without. The application of the wedge might, undoubtedly, very materially improve the art of figging. The screw might, with advantage, be applied to the direction of the horse's head with more exactness, and consequently enable the rider to guide his course with mathematical accuracy. The inclined plane might be introduced to facilitate the backward side of the rider at the time of rearing, as above mentioned. And a system of pulleys, by giving the rider a force equal to the action of many thousand pounds weight, might forever put an end to the dangerous vice of running away.

By the use of the principles of astronomy, I have invented a mode of taking the exact attitude of any horse, at two observations, and am at present at work on a Hippodrometer, (from *hippos* a horse, *chamas* a course, and *metrim* to measure), to ascertain the velocity of his course in the very act of riding.

But while I boast, and, I trust, with reason, of these discoveries, I must candidly confess that a vigorous attention to the theory has sometimes betrayed me into practical errors. When my horse has been pulling earnestly one way, my own intention being at the same time to go another, I have pulled strongly at right angles to the lines of his course, expecting, from the laws of compound motion, that we should then proceed, neither in the line of his efforts or of my pull, but in an intermediate one, which would be the diagonal of the parallelogram, of which our forces were as the sides, but have always found that this method produced a rotatory instead of a rectilinear motion. When a horse has run away, I have, to avoid the weight of force in my own arms, calculated the necessary diminutions of it in his own legs; but unfortunately, estimating it as the squares of the distances multiplied into the times, I was frequently dashed against walls, pitched over gates, and plunged into ponds, before I discovered that it is not as the squares of the times, but merely as the times. I mention these circumstances by way of caution to other theorists, not being at all discouraged myself by such trifling failures; and hoping by your assistance to convince the world that no man can ever become a perfect rider, unless he has first made mathematics his hobby-horse.

I remain, dear Mr. Punch,  
Yours very truly,  
PNEBUS CIRCLE.

## SHIPPING INTELLIGENCE.

There was a report in town yesterday that the "Magnet" had gone down. On enquiry we found she had, but it was to Kingston.