

Fig. 66.

Action 104. Hang on the pole, the hands on both sides, throw both legs at once over one side of the pole, then over the other; do this several times (fig. 66).

These Horse exercises must not be attempted until the preceding exercises have been performed, so as to realise perfect capability in their performance. The gymnast should perform only one of these actions at a time, gaining perfect capability in each before proceeding to the next.

In performing the following exercises, the body and head are to be kept upright, and the knees and ancles straight, unless otherwise expressed, or where a change is absolutely necessary.



Fig. 67.

Action 105. Place the hands on the middle of the pommels, thumbs inside, and spring up so as to bring the arms quite straight. Do this several times without resting, at first slowly, afterwards more quickly (fig. 67).



Fig. 68.

Action 106. Hands on pommels as before, spring up and touch the saddle with the toes (fig. 68).



Fig. 69.

Action 107. As action 105; at the same time spread the legs so as to touch the sides of the horse with the toes (fig. 69).



Fig. 70.

Action 108. Spring up, and throw up the right leg, keeping the other straight; do this several times (fig. 70).



Fig. 71.

Action 109. As action 108 with the left leg.

Action 110. As action 106, and cross the legs on coming down (fig. 71).



Fig. 72.

Action 111. Jump up, and rest with the hands on the pommels, arms straight, thighs against side of horse, spring away from the horse and come back again several times, without coming to the ground (fig. 72).

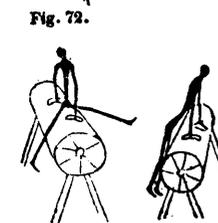


Fig. 73.

Action 112. To mount the horse: place the hands on the pommels, thumbs inside, spring up, rest for a moment with thighs against sides of horse, then throw the right leg over the back pommels, and sit perfectly upright in the saddle.—To dismount: place the left hand on the front pommel, thumb inside, and the right hand on the saddle in front of the body, and spring off (fig. 73).



Fig. 74.

Action 113. Mount as directed in action 112; place both hands close together on front pommel, thumbs in front, fingers behind, arms straight, then raise the body as high as possible several times (fig. 74).

Action 114. As action 113, and swing the body backwards and forwards, knees straight.



Fig. 75.

Action 115. As action 114, and bring the feet on the saddle, behind the hands (fig. 75).

Action 116. Jump on end of horse, and walk on the hands along the back of horse, with the body a little raised, as in action 113.

Note.—In springing up, jump from the toes. In sitting on the horse the thighs should press the sides of it, so as to leave a space between the body and the saddle, just sufficient for the open hand between them.

(TO BE CONTINUED.)

ILLUSTRATIONS OF ASTRONOMY.

No. 5.

THE ECLIPTIC, ZODIAC, SIGNS, NODES, TRANSITS, &c.

True Figure of the Planets.—The spherical form of the planets evinces the supreme wisdom of the Creator. Were they cubes, for instance, instead of spheres, their temperature would be far less regular than it now is; the sun would rise suddenly upon a whole side at once; and suddenly disappear at night; and the blessings of twilight, and the gradual succession of day and night, as they now transpire, would be unknown.

On the maps the planets are represented as exactly round, or spherical; but this is not their precise form. Their rapid motion around their respective axes has a tendency to depress or flatten them at their poles; and extend or widen them at their equators. Hence their equatorial diameter is considerably greater than their polar diameter; the true figures of the planets being that of *oblate spheroids*.

The difference between the polar and the equatorial diameter of the planets respectively, so far as known, is as follows:

Earth, 26 miles.	Jupiter, 6,000 miles.
Mars, 25 "	Saturn, 7,500 "

The *Ecliptic* is the plane or level of the earth's orbit, indefinitely extended. Fig. 1 represents the earth in her orbit, as she would appear to a beholder placed at a distance, and elevated above the plane of the ecliptic. She is represented in perspective as appearing smaller as she grows more distant—as keeping her poles towards the same points in the heavens; and as exhibiting the phases of the moon according as we see more or less of her enlightened side. The arrows placed in her orbit show her direction.

The Poles of the Ecliptic.—The poles of the earth are the extremities of her axis. The poles of the ecliptic are the extremities of the imaginary axis upon which the *ecliptic* seems to revolve. The ends of a rod or pointer, run through the map at the centre of the sun, would exactly represent the poles of the ecliptic.

As the ecliptic and equator are not in the same plane, their poles do not coincide, or are not in the same points in the heavens.

The *Zodiac* is an imaginary belt 16° wide, namely, 8° on each side of the ecliptic; and extending from west to east quite around the heavens. It is represented on the map by the plain circles above and below the ecliptic. In the heavens the *Zodiac* includes the sun's apparent path, and a space of eight degrees south and eight degrees north of it.

Signs of the Zodiac.—The great circle of the Zodiac is divided into twelve equal parts called *signs*. These divisions are shown on the map by the spaces between the perpendicular lines that cross the Zodiac. The ancients imagined the stars of each sign to represent some animal or object, and gave them names accordingly.

The names, order, and symbols of the twelve signs of the Zodiac, are as follows:—

Aries, or the Ram,	♈	Libra, the Balance,	♎
Taurus, the Bull,	♉	Scorpio, the Scorpion,	♏
Gemini, the Twins,	♊	Sagittarius, the Archer, ..	♐
Cancer, the Crab,	♋	Capricornus, the Goat, ...	♑
Leo, the Lion,	♌	Aquarius, the Waterman, ..	♒
Virgo, the Virgin,	♍	Pisces, the Fishes,	♓

The ancient Astrologists supposed that each of these signs governed some particular part of the human body; and even in modern times people sometimes consult the frontispiece of their almanacs, to see whether the "sign" is "in the head," or "in the heart;" so as to attend to certain important affairs "when the sign is right." The idea seems to be that the word "sign" signifies an *omen* or *prognostication*; and that the signs of the Zodiac have some mysterious control over the destiny of man.