no greater than will ensure a curve being made without touching the ice. The feet are placed at right angles to each other with the toes turned out and the body bent slightly forward. Each foot is then raised alternately and set down slightly on the inside edge. It immediately acquires a forward motion, which is increased by pushing with the other foot, that being at right angles and having no sliding motion. The feet must be kept perfectly level when raised and set down, and the skate carried in the same manner an inch above the ice when going forward. The forward stroke is made on the outer edge, and the pressure applied to the inner edge of the other foot. The arms are swung across the chest from side to side, and opposite to the direction of the striking leg in order to balance the weight. The quickest method of stopping is to place the feet parallel, dig the heels into the ice, and arch the back. A longer but more graceful method is to turn the toes in­wards, thus spreading the outside edges athwart the line of going. The feet should never be looked at, as the balance of the body is thereby disturbed. The eye should always be on a line with the horizon.

The fastest skating times recorded, from a standing start, and with no rear wind, have all been made in the United States, at New York, as follows:—100 yards, 103/8 s. ; 200, 215/8 s.; 300, 312/5 s. ; 1/4 mile, 441/5 s. ; 1/2, 1 m. 414/5 s. ; 3/4, 2 m. 342/5 s. ; 1, 3 m. 262/5 s. ; 2, 6 m. 561/5 s. ; 3, 10 m. 332/3 s. ; 4, 14 m. 101/2 s. ; 5, 17 m. 45 s. ; 6, 21 m. 38 s. ; 7, 25 m. 174/5 s. ; 8, 29 m. 94/5 s. ; 9, 32 m. 541/5 s. ; 10, 36 m. 371/5 s. ; 20, 1 h. 14 m. 71/5 s.; 30, 2 h. 31 m. 12 s. ; 40, 3 h. 21 m. 22 s. ; 50, 4 h. 13 m. 36 s. The best running high jump on skates recorded is 3 ft. 13/4 in., and running long jump 15 ft. 2 in.

The second style, termed “ figure skating,” is quite modern and purely English in its origin. This may be practised on any small pond, provided the ice is clear of snow and perfectly smooth. The more numerous oppor­tunities thus afforded make it the more popular style in Great Britain, where the large streams seldom freeze. Figure skating consists in cutting arcs, circles, figures, letters, serpentines, and spirals,—either forwards or back­wards, slowly or rapidly, on one or both feet, singly or in combination. The style can ultimately be analysed into four kinds of strokes, all made on the edges of the blade— the inside forward, the outside forward, the inside back­ward, and the outside backward. The variety of evolu­tions which can be developed from these four movements is endless. The figure skate is made entirely of metal, is

strapless and fixed to the boots by clamps or like devices. Unlike the running skate, it can be instantly put on or taken off. Many kinds have been invented, but the “ Acme,” first produced in Canada, is generally acknowledged the best. The blade projects the merest trifle beyond the length of the foot and is rounded off in an upward direction from the ice at both toe and heel. The bottom is 1/4 inch wide, and the best curve for grinding it is to that of a seven- foot radius, equal throughout and not increased at either end. In stopping, the end of one skate is placed at right angles to the other.

Summer skating has been occasionally provided in “glaciariums” by means of artificially produced ice.

The London Skating Club, founded in 1830, is the leading skating society of Great Britain. Comprising hut 170 members, including 20 ladies, and practising on exclusively private water in Regent’s Park, it countenances figure skating only and gives no encourage­ment whatever to the spread or teaching of a national pastime. The National Skating Association was formed in the year 1879, and, on December 8, held the first race for the running champion­ship at Thorney, Cambridgeshire. The objects of the association are as follows :—

To promote, ascertain, and reward speed in skating,—by the establishment and management of amateur and open skating championships of England ; by stimulating and supplementing local action in holding of skating matches; by establishing an order of merit for speed skaters, and awarding badges for the same; by assisting in providing facilities for skating by the shallow flooding of land in each locality where local branches exist; and by collecting through cor­responding members information of the existence of ice on which skating is practicable, and the supplying of such information to its members; and to pro­mote and encourage figure skating, by the establishment of standards at which figure skaters may aim, by bestowing badges of merit on those who attain these standards, and by promoting and assisting in the formation of skating clubs. To provide rules and regulations for the game of hockey on the ice. Also to pro­mote the establishment of international skating contests in various countries under the direction of an international council.

In the United States and Canada large and shallow artificial ponds under cover, termed “rinks,” are in winter frozen by filling them with water. Each night the surface is covered with a layer of water, which gives a fresh sheet of ice by morning. The covers protect the rinks from snow, another great advantage.

As regards a substitute for ice and ice skating on wooden or asphalt floors, the only invention that has ever been found even partially successful is that of James L. Plimpton of New York in 1869. The implements may be described as skates with two parallel wheels at the toe and heel, so hung that the wheel axles are moved out of parallel by the transverse rocking of the skater’s foot, the wheels setting squarely on the surface whether the skater be upright or canted. The fatigue caused by these “roller skates” is quadruple that of ordinary ice skating.

See *The Field,* December 23, 1882, January 6 and February 3, 1883 ; N. and G. A. Goodman, *Handbook of Fen Skating,* 1882 ; G. Anderson, Art *of Skating,* 4th ed., 1880; H. C. Vendervell and T. M. Witham, *Figure Skating,* 3d ed., 1880; and M. F. M. and S. F. M. Williams’s *Combined Figure Skating,* 1883.

SKELETON. The word “ skeleton,” meaning in Greek a mummy, is popularly taken to denote that assemblage of bones and cartilages which forms the internal support of the body of man and of the animals more or less nearly resembling him. A slight acquaintance with the structure of these animals, however, seems to make it evident that a wider sig­nification must be given to the term, since parts which in man and many of his animal allies are bony or cartilaginous may be only membranous in other such animals ; and, con­versely, parts sometimes quite external, which are merely membranous in man and many animals, may in others assume the structure of horn or bone or may contain bones or cartilages. The word skeleton may indeed be taken to denote both a more or less firm and com­plete *external* protection to a living body, and also a more or less firm and complete *internal* support to such body.

In this very wide sense even many vegetal structures may be said to possess a skeleton. For all plants which can sus­tain themselves in an upgrowth from the ground obviously both require and possess solid structures—various groups and varieties of woody fibres—to support such an upgrowth. Organs also, such as leaves, which need to be maintained

in the form of a thin flat expanse, require and possess bundles of fibres (vulgarly called veins) which are even popularly said to constitute the skeleton of the leaf. Many plants form such skeletal structures largely of silex, as do the grasses and the horsetails *(Equisetum),* and others invest themselves to a greater or less degree with carbonate of lime, as do some *Algæ,* such as *Corallina* and *Melobesia,* while the *Desmidiæ* clothe themselves with a horny coat. Ordinarily, however, the word skeleton is only used to denote certain animal structures, and mainly such structures as form the skeleton of man and of creatures so nearly allied to him as to constitute, together with him, that primary division of animals known as backboned animals or *Vertebrata.*

It is to a concise description of the skeleton as it exists in Vertebrates generally that this article is devoted. For the details of the human skeleton the reader is referred to the article Anatomy. In order, however, that its condi­tion in Vertebrate animals may be better understood, it will be well briefly to point out some of the more important varieties of condition presented by the protecting or sup­porting parts of the body of the lower, or Invertebrate, animals.