orbits so nearly circular in form that the unaided eye would not notice the deviation from that form. But as the orbits are not centred on the sun, which is in a focus of each, the displacement of the seeming circle would be readily seer in the case of Mercury and of Mars. The same statements are true of the orbits of the satellites around their primaries. The major planets all move around the sun in the same direction, from west to east, in orbits but little inclined to each other. All the known minor planets have the same common direction, but their orbits generally have a greater eccentricity and mutual inclination. The general rule is that the satellites also move round in the same direction, and in orbits of moderate inclination. Exceptions occur in the case of the satellites of Uranus, which are nearly perpendicular to the plane of the orbit. The satellite of Neptune, and one satellite, Phoebe, of Saturn, are also quite exceptional, the direction of motion being retrograde.

For the elements of the orbits, and the general character of the several planets see Planet. Details as to each are found under the respective names of the several planets. (S. N.)

**SOLDER** (derived through the French from Lat. *soldare,* to make *solidus,* firm), an alloy easily melted and used for uniting as by a metallic cement two metal surfaces, joints, edges, &c. (See Brazing and Soldering.)

**SOLE** *(Solea),* the most valuable of European flat-fishes.@@1 For most people who look at fish merely from the culinary point of view, soles are of two kinds: true soles, with such varieties as Dover soles and Brixham soles (slips being the name applied to young specimens), and lemon soles, an inferior fish, which is no sole at aU, but a sort of dab *(Glyptocephalus microcephalus).* Leaving out the latter, there are five species on the British coasts; the common sole *(Solea vulgaris)* the French sole, or sand sole lemon sole of Yarrell (*S*. *lascaris),* the thick-back (*S*. *varie gata),* and the solenette or little sole *(S. lutea).* AU these agree in the right side being coloured and bearing the eyes, in the elongate form, in the small eyes (separated by a space covered with scaly skin, in the small, twisted mouth, with minute teeth on the colourless side only), and with the snout projecting beyond the mouth and more or less hooked. All true soles are excellent, but the common species is the only one which, from its larger size, growing to a length of 26 in. and attaining maturity at a length of about 10 in., regularly appears on aU the markets. It occurs from the south-west coast of Scandinavia, Mecklenburg and Great Britain to the Mediterranean. Most of the best fishing grounds for soles lie comparatively near land, though the spawning takes place some miles away.

Much information on the life history of the sole will be found in the monograph by J. T. Cunningham (Plymouth, 1890).

**SOLEMN** (Lat. *sollemnis, sollennis,* less correctly *solennis,* yearly, annual; from *sollus≈totus,* whole, entire, Gr. oλos, and *annus,* year), properly that which occurs annually, hence at stated intervals, regular, established; the term being particularly used of religious rites or ceremonies which recur at stated inter­vals, hence festive, sacred, marked by religious ceremony or ritual, and so grave, impressive, serious, the most general current usage. Another branch of meaning stresses the formal, customary aspect; and hence in such phrases as “ solemn act,” probate in “ solemn form,” it means that which is done with all due forms and ceremonies.

**SOLENT, THE,** a strait of the English Channel, between the mainland (the coast of Hampshire, England), and the north­western coast of the Isle of Wight, forming the western entrance to Southampton Water, Spithead being the eastern. Its length, from the eastern shore of Southampton Water to the Needles rocks off the western extremity of Wight, is 15 m. The general breadth is from 2½ to 3 m., but between Stone Point on the mainland and Egypt Point on the north coast of Wight it narrows to 1¾ m.; and 3½ m. north of the Needles there springs from the mainland a great shingle bank, mostly only a few yards in breadth above water, but nearly 2 m. in length.

It reduces the breadth of the Solent to a little over ¾ m., and broadens at the end, on which stands Hurst Castle, an important fortification dating from the time of Henry VIII. Here Charles I. was imprisoned in 1648. The coast of the mainland is low but picturesque, and is broken by the shallow estuaries of the Beaulieu River and the Lym, with the small port of Lymington upon it. The coast of Wight rises more steeply. On this side the Medina estuary opens northward, and those of the Newtown and the Yar north-westward into the strait. At the mouth of Southampton Water is a projecting bar resembling but smaller than that of Hurst Castle, and like it bearing a Tudor fortress, Calshot Castle. The Solent is frequently the scene of yacht races. The configuration of the coast causes a double tide in the strait.

**SOLESMES, a** village of western France on the left bank of the Sarthe in the department of Sarthe, 29 m. W.S.W. of Le Mans by road. In 1010 a priory was founded at Solesmes and placed under the authority of the abbey of La Couture of Le Mans. Suppressed at the revolution, it was established as a Benedictine monastery in 1830. In 1837 it was raised to the rank of abbey and became a centre of learning; the music here was also famous. A nunnery was afterwards founded beside it, but both institutions were abandoned after the passing of the associations law in 1901. The monastery, rebuilt at the end of the 19th century, forms a lofty mass of buildings on the river bank. Its church (13th and 16th centuries) is interesting only for the possession of two masterpieces of sculpture of uncertain authorship, executed approximately between 1490 and 1550. The most striking represents the burial of Christ and is sheltered by a stone structure, the front of which is beautifully carved. An arched opening in this front reveals the central group of eight figures surrounding the tomb, that of Mary Magdalen in the foreground being remarkably lifelike and expressive. The other work similarly enclosed represents the burial of the Virgin and is the later of the two in date and in the pure Renais­sance style. Sculptures representing Jesus among the Doctors and other scenes are also in the church.

SOLETO, a village of Apulia, Italy, in the province of Lecce, from which it is 11 m. S. by rail, situated 299 ft. above sea­level. Pop. (1901), 3349. The Romanesque church of S. Stefano contains Byzantine frescoes of the 14th century similar to those in the subterranean chapel of the Santi Stefani at Vaste, south of Otranto, and others showing the formation of an independent style. The fine, richly decorated campanile adjoining the former cathedral was erected in 1397.

**SOLEURE** (Ger. *Solothurn),* one of the cantons of north­western Switzerland. Its total area is 305∙5 sq. m., of which 294 sq. m. are reckoned as “productive,” 111∙3 sq. m. being covered by forests and ∙29 sq. m. by vineyards. Save two small districts in its southern portion the whole canton is situated in the Jura range, while it is said to be the most irregular in shape of all the Swiss cantons, this being accounted for by the fact that it consists simply of the territories won at different dates by the town from which it takes its name. It includes most of the Aar valley between the towns of Bienne and Aarau, neither of which is in the canton, while in its northern portion the waters join the Birs River, and in its southern portion is the last bit of the Emme before its junction with the Aar. It comprises three isolated districts, of which one (Steinhof) on the south is an “ enclave ” in the canton of Bern, while the others, Hofstet­ten, that includes the famous pilgrimage resort of Mariastein, and Klein Lützel, are on the Alsatian frontier, and bounded by the cantons of Bern and of Basel. The highest point in the canton is the Hasenmatt (4748 ft.) which forms the culminating summit of the Weissenstein ridge, that rises just north-west of the town of Soleure, and boasts of an hotel well-known as a great centre for the air and whey cure. The canton is well supplied in its southern portion with railways, the main line from Bienne to Aarau running through it past the great junction of Olten, where the direct lines from Lucerne by the St Gotthard, from Bern, from Zürich, and from Basel all unite. Formerly the districts composing the canton were in the dioceses of Lausanne,

@@@1 The American sole (*Achirus* *fasciatus)* is a small flat-fish of inferior quality.