Grande line. In great part the city occupies an elevated open stretch of tableland commanding extensive views of the surround­ing country; and a small part of it is in the low alluvial land bordering the Tieté. The upper part has several slight elevations forming healthy residential districts. The elevations above sea-level are 2382 ft. at the Central do Brazil railway station in the lower town, 2418 ft. at the São Paulo railway station, 2841 ft. in the Consolação suburb, and 2953 ft. in Villa Mariana. The city is just within the tropics, but its elevation above the sea gives it a temperate climate, bracing in the cool season and yet with high sun temperatures in summer. The broad eroded bed of the Tieté is swampy and is subject to extensive inundations causing malarial and intestinal disorders; otherwise the city is singularly healthy, though its sanitary condition is poor. The picturesqueness of the city is heightened by the ravine of a small stream passing through it and spanned by viaducts and bridges. The city squares are commonly open places with an occasional statue but without ornamental gardens. The Public Garden, near the São Paulo railway station in the Luz section, is a recreation ground embellished with tropical plants and an artificial lake. The streets are well paved and lighted with gas and electricity, and have electric tramways. Although there are still many old structures and residences to be seen in the old town, most of the public and business buildings and private residences are of the modern Italian and French type. Brick is used to some extent, but the building material most used is broken stone and mortar, plastered outside, and covered with stucco mouldings and ornaments. The private residences of the city are the finest in the republic. There is much wealth in the state, especially among the large coffee planters, and the city is their favourite residence. Some of their palatial dwellings are surrounded with beautiful gardens and parks. The water- supply is derived from Cantareira hills, and there is a modern sewerage system, constructed by an English company. The more important public buildings are the new government palace, the palaces of agriculture, finance and justice, the executive residence, the immense Polytechnic School, the Normal School, the School of Agriculture, the public hospital called the Isola- mento, the charity hospital, the São Paulo railway station with a beautiful stone tower, and the theatre, rivalling some of the best in Europe. Like other Brazilian cities São Paulo has a number of old religious buildings. There are also several excellent educational and scientific institutions which are in great part supported by the state, among which are the Mackenzie College, created through the gift of an American capitalist, a school of law, a Pasteur Institute, and a bacteriological institute. The police force of the state is a military organization and con- sists of a brigade of about 5000 men (infantry, cavalry, civic guards, firemen, and a body of hospital attendants for public emergency cases), under a colonel of the regular army. Manu­factures include textiles, footwear, clothing, food products, beer, artificial liquors, furniture, domestic utensils, &c. The São Paulo Light and Power Co., whose works are situated at the falls of the Tieté a considerable distance N.W. of the city, supplies about 8000 horse-power to local industries in addition to what is needed for the electric railway (108 m.), the oldest enterprise of this character in Brazil. The city has a large Italian population and many Italian shops and industries.

São Paulo was founded by the Jesuits under Manoel de Nobrega in 1554 and at first bore the name of Piratininga. In 1681 it succeeded São Vicente as the capital of the captaincy. The declaration of Brazilian independence occurred on Sept. 7, 1822, on the plain of Ypiranga, near the city, where a monument commemorates the event.

SAP. (1) Juice, the circulating fluid of plants (see Plants, *§ Physiology).* The word appears in Teutonic languages, cf. Ger. *Saft,* and may be connected ultimately with the root seen in Lat. *sapere,* taste, hence to know, cf. *sapientia,* wisdom, cf. Gr. σoφ6s, wise. On the other hand it may, like Fr. *sève,* Span. *saba,* have come direct from Lat. *sapa,* must, new wine, itself also from the same root. The Gr. όπός is represented in Lat. by *sucus.* (2) A military term for a trench dug by a

besieging force for the purpose of approach to the point of attack when within range, hence “ to sap,” to undermine, dig away the foundations of a wall, &c. The word is derived through the Old Fr. from the Med. Lat. *sapa, sappa,* a spade, entrenching tool, Gr. *σκαπάνη, σκάπταν,* to dig. (See Fortification and Siege-craft.)

SAPAN WOOD (Malay *sapang),* a soluble red dyewood from a tree belonging to the leguminous genus *Caesalpinia,* a native of tropical Asia and the Indian Archipelago. The wood is somewhat lighter in colour than Brazil wood and its other allies, but the same tinctorial principle, brazilin, appears to be common to all.

**SAPPHIC METRE,** Sapphics, an ancient form of quantitative verse, named after the Aeolian poetess Sappho, who is supposed to have invented it, and who certainly used it with unequalled skill. A sapphic line consists of five equal beats, of which the central one alone is of three syllables, while the others consist of two each. The original Greek sapphic was of this type:—

The sapphic strophe consists of three of these lines followed by an adonic, thus:—

Horace adopted, and slightly adapted, this form of verse, for some of his most engaging metrical effects. The Greek poets had permitted the caesura to come where it would, but Horace, to give solidity to the form, introduced the practice of usually ending a word on the fifth syllable :

jam satis terris nivis atque dirae,

the second half of the sapphic leaping off, as it were, with a long syllable which connects it with the first half. This is a typical example of the Latin sapphic strophe :—

lnte|ger vi|tae sceler|isque | purus non e|get Maur|is jacu|lis ne|que arcu, nec ve|nena|tis gravi|da sa|gittis,

Fusce, phar|etra.

Before the days of Horace, Catullus had used this form in Latin, and afterwards sapphics were introduced by the pseudo-Seneca into his tragedies. In the middle ages the sapphic strophe was frequently employed in the Latin hymns, especially by Gregory the Great. Later on, considerable laxity was introduced, and a dactyl was frequently substituted for the first trochee; this quite destroys the true character of the measure. It makes it a more easy metre, however, for those who write modern accentuated verse. We see a loose but effective specimen of it in the famous

Needy knife | grinder! | whither | are you | going?

Rough is the | road, your | wheel is | out of | order.

But nearer to the effect of the antique verse would be :

Needy | grinder! | whither oh! | are you | going?

Rough the | road ; your | destitute | wheel is | broken,

although this certainly does not suit English versification so well. English sapphics were written by the Elizabethan poet, Thomas Campion (*q.v.*), and by William Cowper. Mr Swinburne has attempted to create the effect of the ancient Aeolian metre in a daring and brilliant stanza. Sapphics have been written more successfully in German than in any other modern language. The earliest original German poem in the form is said to be an anonymous hymn to St Mary Magdalene, dated 1500. Voss kept strictly to the metrical scheme of the Latin in his famous translation of the *Odes* of Horace (1806), and among German poets who have cultivated sapphics are to be mentioned Klopstock, Platen, Hamerling and Geibel.

SAPPHIRE,@@1 a blue transparent variety of corundum, or native alumina, much valued as a gem-stone. It is essentially the same mineral as ruby, from which it differs chiefly in colour. The colour of the normal sapphire varies from the palest blue to deep indigo, the most esteemed tint being that of the blue cornflower. Many of the crystals are parti-coloured, the blue being distributed in patches in a colourless or yellow stone; but by skilful cutting, the deep-coloured portion may be caused to im­part colour to the entire gem. As the sapphire crystallizes in the hexagonal system it is dichroic, but in pale stones this character may not be well marked. In a deep-coloured stone the colour may be resolved, by the dichroscope, into an ultramarine

@@@l Indirectly from Gr. *σάνφαροτ,* but there seems no doubt that this term, like the Hebrew *sapir* of the Old Testament, was formerly applied to what is now called lapis lazuli ; the modern sapphire was

probably known as υάbα0os (*hyacinthus*).