Seoul has some wide streets of shops, hundreds of narrow alleys, and is very fairly clean. It has an electric tramway 4 m. long, and is the centre of the railway system of the country.

SEPIA (Gr. *σηπία,* cuttlefish), a deep brown pigment obtained from the ink-sacs of various species of cuttlefish *(q.v.).* To obtain sepia the ink-sac, immediately on the capture of the animal, is extracted from the body and speedily dried to prevent putrefaction. The contents are subsequently powdered, dissolved in caustic alkali, and precipitated from the solution by neutralizing with acid. The precipitate after washing with water is ready to make up into any form required for use.

*Sepia-bone* or *cuttle-bone* consists of the internal “ shell ” or skeleton of *Sepia* *officinalis* and other allied species. It is an oblong convex structure from 4 to 10 in. in length and 1 to 3 in. in greatest width, consisting internally of a highly porous cellular mass of calcium carbonate with some animal matters covered by a hard thin glassy layer. It is used principally as a polishing material and for tooth powder, and also as a moulding material for fine castings in precious metals.

SEPOY, the usual English spelling of *sipähi,* the Persian and Urdu term for a soldier of any kind, cf. *spahi.* The word *sipäh,* “ army,” from which *sipāhī, "*soldier,” is derived, corresponds to the Zend *ζpādhα,* Old ∙Persian *çpāda,* and has also found a home in the Turkish, Kurdish and Pashto (Pushtu) languages (see Justi, *Handbuch der Zendsprache,* p. 303, 6), while its deriva­tive is used in all Indian vernaculars, including Tamil and Burmese, to denote a native soldier, in contradistinction to *gorä, "*a fair-complexioned (European) soldier.” A sepoy is at the present day strictly a private soldier in the native infantry of the Indian army.

SEPPINGS, SIR ROBERT (1767-1840), English naval architect, was born at Fakenham, Norfolk, in 1767, and in 1782 was apprenticed in Plymouth dockyard. In 1800, when he had risen to be master shipwright assistant in the yard, he invented a device which, as compared with the laborious process of lifting then in vogue, greatly reduced the time required for effecting repairs to the lower portions of ships in dry dock. His plan was to make the keel of the ship rest upon a series of supports placed on the floor of the dock and each consisting of three parts—two being wedges arranged one on each side of the keel at right angles to it, with their thin ends together, while the third was a vertical wedge fitting in and supported by the lower pair. The result was that it became possible in a comparatively short time to remove these supporting structures by knocking out the side wedges, when the workmen gained free access to the whole of the keel, the vessel remaining suspended by the shores. For this invention Seppings received £1000 from the Admiralty, and in 1804 was promoted to be a master shipwright at Chatham. There, in spite of the repugnance to innovation displayed by the naval authorities of that period, he was able to introduce important improvements in the methods of ship-construction. In particular he increased the longitudinal strength of the vessels by a system of diagonal bracing, and modified the design of the bows and stern, so that they became stronger, not only offering better protection than the old forms to the crews against the enemy’s fire, but also permitting a powerful armament to be fitted. Seppings, who received a knighthood in 1819, was ap­pointed surveyor of the navy in 1813, and held that office till his retirement in 1832. He died at Taunton on the 25th of September 1840.

SEPSIS (Gr. σ⅞≠ts, putrefaction), or Septic Infection, a term applied in medicine and surgery to indicate the resultant infection of a wound or sore by micro-organisms or by their products. Under this general heading come three great constitutional diseases, differing radically from each other in their aetiology and pathology: *sapraemia, septicaemia* and *pyaemia.*

*Sapraemia* (Gr. *σαπρbs,* rotten, αTμα, blood), or septic intoxi­cation, is the result of the absorption of a dose of the toxins produced by micro-organisms from some area of infection without the entrance of the micro-organisms themselves into the blood. This condition was for a long time confounded with septicaemia, but is distinguished from it in being a chemical intoxication. The blood in sapraemia if injected into an animal is incapable

of reproducing the disease as in septicaemia. Any condition in which there is a mass of decomposing tissue in the neighbour­hood of an unhealed wound may give rise to sapraemia. In surgical practice it may be met with in large, deep and badly- drained wounds where a quantity of putrifying material is pent up. When it arises in connexion with wounds accidentally received, it may be unavoidably due to the dirty state of the skin or to foreign bodies entering the wound. Absorption of toxins is notably frequent in portions of decomposing placental tissue which may accidentally have remained behind in the uterus after childbirth, and may give rise to puerperal sapraemia. Sapraemia is acute or subacute directly according to the amount of toxin absorbed. By some writers it is divided as follows: (1) Hectic fever is a chronic blood poisoning with continual absorption of small doses of the toxins. This variety usually arises in long-continued suppuration of bones and joints, and in decomposition occurring in a pulmonary cavity. The marked symptom is a sharp rise of temperature in the evenings; the face becomes flushed and the pulse rapid. After profuse sweating the temperature drops. Diarrhoea and wasting are a usual accompaniment. (2) Septic traumatic fever is a slight form which may follow burns or compound fractures and which tends to subside in a few days. (3) In acute septic intoxication large amounts of the poison are absorbed. It generally starts with a severe rigor followed by a continuous high temperature, dry tongue, rapid pulse and severe headache, together with nausea and vomiting, and in the later stages diarrhoea. If the case be a severe one rapid prostration speedily comes on with low muttering delirium, the temperature may fall to subnormal, and a gradually deepening coma may end in death; other cases pass into a typically “ typhoid state,” death occurring from exhaustion at the end of about a week. (4) Amyloid (Gr. *άμυλον,* starch, *etδos,* form), or lardaceous disease, usually of the liver, spleen, kidneys or other organs, is one of the results of long-continued septic intoxication. A substance derived from the breaking down of pus and tissue cells is carried in the blood and deposited in the connective tissue, of the coats of the smaller arteries, and the viscera become infiltrated with a material looking like lard. The liver and spleen, being the organs most usually affected, become immensely enlarged.

No form of septic infection yields so easily to treatment as sapraemia. The prompt removal of the cause of septic absorp- tion, the flushing out of the wound with weak antiseptic solutions, in order to mechanically remove any decomposing masses, and the establishment of proper drainage in deep wounds, is usually followed by a fall in temperature and an improvement in the general condition. A strong, preferably mercurial, purgative should be given to aid in the elimination of toxic material. For the same purpose the injection into the veins or into the cellular tissue of large quantities of normal saline solution is useful. Heart depression should be overcome by diffusible stimulants and hypodermic injections of strychnine. When the wound has become “ surgically clean ” recovery is usually rapid.

*Septicaemia* is an acute infective disease differing from sapraemia in that the micro-organisms themselves are absorbed, entering the general circulation, and may on examination be found in greater or lesser number in the blood-stream itself. The organism or organisms grow and reproduce themselves in the blood or tissues. A number of different organisms have been isolated from the blood-stream in cases of septicaemia. The most frequently found is the *Streptococcus pyogenes,* which is present in 50% of the cases and is common in puerperal septicaemia and in ulcerative endocarditis. The *Staphylococcus pyogenes aureus et albus* is also a frequent cause, but sometimes septicaemia may be due to other pathogenic microbes such as the *Pneumococcus,* the *Bacillus coli communis, Bacillus pyo- cyαneus, Bacillus oedematis maligni* and the *Gonococcus.* The micro-organisms are conveyed by the blood-stream to different parts of the body, in which as in the original wound itself they both multiply and set up factories for the production of toxins. The disease commonly follows blows or wounds which have