His son Otto Wilhelm Struve (b. 1819), having studied at the academy at St Petersburg, became assistant at Pulkowa in 1839, and director in 1862 on his father’s resignation. From 1847 to 1862 he was advising astronomer to the headquarters of the army and navy; chairman of the International Astro­nomical Congress from 1867-1878; acting president of the International Metric Commission in 1872; and president of the International Congress for a Photographic Survey of the Stars in 1887, in which year he was also made a privy councillor. His contributions to astronomy cover a wide field: a list of his publications is given in Poggendorff, *Biographisch-Litter arische,* vols. 2, 3, 4.

Another son, Heinrich Wilhelm Struve (b. 1822), studied chemistry, and obtained a public appointment as chemical expert to the administration of the Caucasus.

Two of Otto Wilhelm Struve’s sons have also been prominent in the world of science. Karl Hermann Struve (b. 1854) studied mathematics at Dorpat, and became in 1883 assistant, and in 1890, on his father’s retirement, astronomer at the observatory at Pulkowa. In 1895 he became professor at the Albertus University and director of the observatory at Königs­berg; and in 1904 he was called to Berlin as professor and director of the observatory there. His investigation of the Saturnian system was crowned by the Royal Astronomical Society of London in 1903. Gustav Wilhelm Ludwig Struve (b. 1858) studied at Dorpat, Bonn and Leipzig, and became observer at the Dorpat observatory in 1886. This post he retained until 1894, when he migrated to the university of Cracow as extraordinary professor, becoming in 1897 ordinary professor of astronomy and geodesy.

**STRYCHNINE,** C21H22N2O2, an alkaloid discovered in 1818 by Pelletier and Caventou in St Ignatius’s beans *(Strychnos Ignatii)* ; it also occurs in other species of *Strychnos, e.g. S. Nux vomica, S. colubrina, S. Tieuté,* and is generally accompanied by another .alkaloid brucine, C23H26N2O4∙4H2O, which was isolated by Pelletier and Caventou in 1819. Strychnine crystallizes from alcohol in colourless prisms, which are practically insoluble in water, and with difficulty soluble in the common organic solvents. Its taste is exceptionally bitter. It has an alkaline reaction, and is a tertiary monacid base. It is optically active, the natural form being laevorotatory. Brucine closely resembles strychnine, and is its dimethoxy derivative. The constitutions are unknown (see J. Schmidt, *Die Alkaloidchemie,* 1904; 1909).

*Medicine.—*The B.P. dose of *strychnine* is 1/60 to 1/15 gr. in solution or in pill form. A preparation is *syrupus ferri phos- phatis cum quinina et strychnina,* containing 1/32 gr. of strychnine in each fluid drachm. *Strychninae hydrochloridum* is also used; it is much more soluble than strychnine. From it is prepared *liquor strychninae hydrochloridi,* containing 1 gr. of hydrochloride in no minims. The United States pharma­copoeia also contains *strychninae nitras* and *strychninae sulphas.* Strychnine is incompatible with liquor arsenicalis and potassium iodide.

*Physiological Action.—*Applied externally strychnine is a powerful antiseptic, but its poisonous nature prevents it from being used for this purpose. Brucine is a local anaesthetic. Strychnine enters the blood as such, being freely absorbed from mucous surfaces or when given hypodermically. Internally strychnine acts as a bitter, increasing the secretion of gastric juice and the intestinal peristalsis, being a direct stimulant to the muscular coat; in this manner it has a purgative action. The specific effects of the drug, however, are upon the central nervous system. It excites the motor areas of the spinal cord and increases their reflex irritability. Small doses increase the sensibility of touch, sight and hearing; large doses cause twitching of the muscles and difficulty in swallowing; while in overdose violent convulsions are produced. The cerebral con­volutions remain unaffected, but the important centres of the medulla oblongata are stimulated. Not only is the respiratory centre stimulated but the cardiac centre is acted upon both directly by the drug and indirectly for a time by the enormous rise in blood pressure due to the contraction of the arterioles all over the body. Ordinary doses have no effect upon the temperature but in over­dose the temperature rises during a convulsion. Strychnine is eliminated by the kidneys as strychnine and strychnic acid. It is excreted very slowly and therefore accumulates in the system.

*Therapeutics.—*Strychnine is chiefly used as a stimulant. It is indicated in paralyses (chiefly functional), and is most valuable in the treatment of post-diphtheritic paralysis. In progressive lead palsy, beri-beri, and the paralysis following acute alcoholism, fairly large doses are useful. In pneumonia and other acute disease, where the patient is liable to sudden collapse, a hypodermic in­jection of strychnine will often save thé patient’s life. In collapse following severe haemorrhage and in sudden and accidental arrest of the heart or respiration during chloroform narcosis an intra­muscular injection of 1/12 gr. of the hydrochloride may stimulate the cardiac action. In acute opium poisoning strychnine is very valuable. It is a physiological antagonist of chloral hydrate, morphine and physostigmine, and may be given in poisoning by these drugs. In dyspnoea due to emphysema, phthisis and asthma, strychnine is of service, given internally in doses of 1 to 3 minims of the liquor. The syrup of iron, quinine and strychnine is used as a tonic.

*Toxicology.*—The symptoms of strychnine poisoning usually appear within twenty minutes of the ingestion of a poisonous dose, starting with an uneasy sensation, stiffness at the back of the neck, twitching of the muscles and a feeling of impending suffocation. The patient is then seized with violent convulsions of a tetanic char­acter; the arms are stretched out, respiration impeded, the muscles are rigid, the body is thrown into opisthotonos, *i.e.* it rests bow-form on the head and the heels (occasionally the body is flexed forward [emprosthotonos], the eyes remain wide open and fixed, and the mouth is drawn aside *(risus sardonicus).* After a minute the muscles relax, and the patient sinks back exhausted, conscious­ness being preserved throughout. Any noise, a draught of air or a touch may cause a convulsion. If the case is about to terminate fatally the spasms rapidly succeed each other and death usually occurs within two hours, either from asphyxia produced by spasm of the respiratory’ muscles or more rarely from exhaustion. After death the position of the body may or may not be flexed ; usually rigor mortis develops rapidly. In cases which recover the con­vulsions diminish in severity , leaving the patient exhausted. Com­plications are infrequent. The average fatal dose for an adult is 11/2 grs., but death has resulted in twenty minutes from 1/2 grain. On the other hand, recovery has taken place after 5 and 10 and even 20 grains have been swallowed, but in the latter case an emetic was at once administered. Idiosyncrasy plays a considerable part in determining the effects, some people being particularly susceptible; death has occurred in five minutes from the appearance of the first symptoms, but when a narcotic has been administered at the same time as the poison the development is proportionately slow. Tetanus resembles strychnine poisoning, but the development of the symp­toms in tetanus is usually much slower, death rarely occurring within 24 hours. In strychnine poisoning trismus or lockjaw is generally secondary to spasm of the other muscles, while in tetanus it is usually the first symptom, no relaxation taking place between the spasms.

The treatment of strychnine poisoning is to immediatcly evacuate the stomach with a stomach-pump or emetic,, chloroform being administered to allay the spasms. If the patient can swallow, draughts of water containing tannic acid may be given. Nitrite of amyl inhalations are useful in the early stages when the respiratory muscles are freely movable. Chloral and potassium bromide may be given as physiological antidotes. If death from asphyxia appears imminent artificial respiration may be resorted to.

**STRYETENSK,** or Sryetensk, a Cossack village of Asiatic Russia, in the province of Transbaikalia, 231 m. by rail E. of Chita, and a terminus of the Trans-Siberian railway. It is situated on both banks of the river Shilka, and its population of 8500 rises to over 10,000 during the season of navigation. Stryetensk has steam flour-mills and soap works.

**STRYPE, JOHN** (1643-1737), English historian and biographer, was born in Houndsditch, London, on the 1st of November 1643. He was the son of John Strype, or van Stryp, a member of a Brabant family who, to escape religious persecution, settled in London, in a place afterwards known as Strype’s Yard in Petticoat Lane, as a merchant and silk throwster. The younger John was educated at St Paul’s School, and on the 5th of July 1662 entered Jesus College, Cambridge; thence he proceeded to Catherine Hall, where he graduated B.A. in 1665 and M.A. in 1669. On the 14th of July of the latter year he became perpetual curate of Theydon Bois, Essex, and a few months afterwards curate and lecturer of Leyton in the same county. He was never instituted or inducted to the living of Leyton, but in 1674 he was licensed by the bishop of London to preach and expound the word of God, and to perform the full office of priest and curate while it was vacant, and until his death he received the profits of it. In 1711 he obtained from Archbishop Tenison the sinecure of West Tarring, Sussex, and he discharged the duties of lecturer at Hackney from 1689 till 1724. At the latter