diminution of the recorded sunshine for the whole year by 37%, and it is clear that the contamination extends in some degree as far as Kew, where the loss amounts to about 10%. There is evidence of various kinds to show that the effect of the smoke cloud of cities can be traced sometimes for great distances, and in special conditions of weather with easterly winds the effect is sometimes remarkably persistent. (W. N. S.)

**SUNSTONE,** a felspar exhibiting in certain directions a bril­liant spangled appearance, which has led to its use as an ornamental stone. The effect appears to be due to reflections from enclosures of red haematite, in the form of minute scales, which are hexagonal, rhombic or irregular in shape, and are dis­posed parallel to the principal cleavage-plane. These enclosures give the stone an appearance something like that of aventurine *(q.v.),* whence sunstone is known also as “ aventurine-felspar.” It is not common, the best-known locality being Tvedestrand, near Arendal, in south Norway, where masses of the sunstone occur embedded in a vein of quartz running through gneiss. It is found also near Lake Baikal, in Siberia, and at several localities in the United States, notably at Middletown, Delaware county, Pennsylvania, and at Statesville in North Carolina. The felspar which usually displays the aventurine appearance is oligoclase (*q.v.*), but the effect is sometimes seen also in orthoclase *(q.v.)∙.* hence two kinds of sunstone are distinguished as “ oligoclase sunstone ” and “ orthoclase sunstone.” The latter has been found near Crownpoint and at several other localities in the state of New York, as also at Glen Riddle in Delaware county, Pennsylvania, and at Amelia Court House, Amelia county, Virginia.

**SUNSTROKE** *(Heatstroke·, Insolation·, Thermic Fever; Siriasis),* a term applied to the effects produced upon the central nervous system, and through it upon other organs of the body, by exposure to the sun or to overheated air. Although most frequently observed in tropical regions, this disease occurs also in temperate climates during hot weather. A moist condition of the atmosphere, which interferes with cooling of the overheated body, greatly increases the liability to suffer from this ailment.

Sunstroke has been chiefly observed and investigated as occurring among soldiers in India, where formerly, both in active service and in the routine of ordinary duty, cases of this disease constituted a considerable item of sickness and mortality. The increased attention now paid by military authorities to the personal health and comfort of the soldier, particularly as regards barrack accommodation and dress, together with the care taken in adjusting the time and mode of movement of troops, has done much to lessen the mortality from this cause. It would appear that, while any one exposed to the influence of strong solar heat may suffer from the symptoms of sunstroke, there are certain conditions which greatly predispose to it in the case of individuals. Causes calculated to depress the health, such as previous disease, particularly affections of the nervous system—anxiety, worry or overwork, irregularities in food, and in a marked degree intemperance—have a powerful predisposing influence, while personal uncleanliness, which prevents among other things the healthy action of the skin, the wearing of tight garments, which impede the functions alike of heart and lungs; and living in overcrowded and insanitary dwellings have an equally hurtful tendency.

While attacks of sunstroke are frequently precipitated by exposure, especially during fatigue, to the direct rays of the sun, in a large number of instances they come on under other circum­stances. Cases are of not infrequent occurrence among soldiers in hot climates when there is overcrowding or bad ventilation in their barracks, and sometimes several will be attacked in the course of a single night. The same remark applies to similar conditions existing on shipboard. Further, persons whose occupation exposes them to excessive heat, such as stokers, laundry workers, &c., are apt to suffer, particularly in hot seasons. In the. tropics Europeans, especially those who have recently arrived, are more readily affected than natives. But natives are not exempt.

The symptoms of heatstroke, which obviously depend upon the disorganization of the normal heat-regulating mechanism, as well as of the functions of circulation and respiration, vary in their intensity and likewise to some extent in their form. Three chief types of the disease are usually described.

1. *Heat Syncope.—*In this form the symptoms are those of exhaus­tion, with a tendency towards fainting or its actual occurrence. A fully developed attack of this description is usually preceded by sickness, giddiness, some amount of mental excitement followed by drowsiness, and then the passage into the syncopal condition, in which there are pallor and coldness of the skin, a weak, quick and intermittent pulse, and gasping or sighing respiration. The pupils, are often contracted. Death may quickly occur; but if timely treatment is available recovery may take place.

2. *Heat Apoptexy or Asphyxia.—*In this variety the attack, whether preceded or not by the premonitory symptoms already mentioned, is usually sudden, and occurs in the form of an apoplectic seizure, with great vascular engorgement, as seen in the flushed face, congested eyes, quick full pulse and stertorous breathing. There is usually insensibility, and convulsions are not infrequent. Death is often very sudden. This form, however, is also amenable to treatment.

3. *Thermic Fever.*—This variety is characterized chiefly by the excessive development of fever (hyperpyrexia), the temperature of the body rising at such times to 108° to 110° F. or more. Accompany­ing this are the other symptoms of high febrile disturbance, such as great thirst, quick full pulse, pains throughout the body, headache, nausea and vomiting, together with respiratory embarrass­ment. After the attack has lasted for a variable period, often one or two days, death may ensue from collapse or from the case assuming the apoplectic form already described. But here, too, treatment may be successful if it is promptly applied.

Besides these, other varieties depending on the prominence of certain symptoms are occasionally met with. The chief changes, in the body after death from heatstroke are those of anaemia of the brain and congestion of the lungs, together with softness of the heart and of the muscular tissues generally. The blood is dark and fluid and the blood corpuscles are somewhat altered in shape. Attacks, of sunstroke are apt to leave traces of their effects upon the constitu­tion, especially upon the nervous system. A liability to severe headache, which in many cases would seem to depend upon a condi­tion of chronic meningitis, epileptic fits, mental irritability and alterations in the disposition are among the more important. It is. often observed that neat in any form is ever afterwards ill borne, while there also appears to be an abnormal susceptibility to the action of stimulants. The mortality from sunstroke is estimated at from 40 to 50%.

*Treatment.—*Means should be adopted to prevent attacks in the case of those who must necessarily be exposed to the sun. These consist in the wearing of loose clothing, with the exception of the head-dress, which ought to be worn close to the head, in due attention to the function of the skin, and in the avoidance of alcoholic and other excesses. Cold water may be drunk in small quantities at frequent intervals. Sleeping in the open air in very hot seasons is recommended. The treatment of a patient suffering from an attack necessarily depends upon the form it has assumed. In all cases, he should if possible be at once removed into a shaded or cool place. Where the symptoms are mostly those of shock and there is a