

Mechanics and General Science.

SCIENTIFIC NOTICES.

NO III.

ON DRY FOGS.

A very curious phenomenon which has attracted attention from the earliest ages, is that which is properly known by the above name of Dry Fog, but which in many places is called sun-smoke, moor-smoke, heath-smoke, and by the Germans, Hoeherauch and Haarrauch. Although it cannot, properly speaking, be classified with any of those phenomena that have formed the subjects of our preceding papers, inasmuch as the substance contained in the air, and which gives rise to such peculiar appearances, does not readily or visibly fall to the ground, yet it is a subject of such great interest—more especially in this country, from its apparent connection with the Indian summer—that it may not be altogether out of place in a series of articles purporting to treat of the phenomena of the atmosphere.

The dry fog is not a phenomenon of very frequent occurrence. It may be seen slightly in some parts of the world, more especially in Germany, several times in every year; but it is only rarely that it acquires such intensity as to produce the extraordinary and widely spread appearances that attracted so much attention in 1783.

Kamitz, from whose work the greater part of this notice is taken, mentions a number of recorded instances of peculiar appearances, which are so similar that there can be no doubt they were all produced by the same cause. The first-recorded instance is that which occurred in the year 526, in the reign of the Emperor Justinian, while the last was that of 1834.

The phenomenon, as it usually occurs, and as it is frequently observed in a greater or less degree in the north-western parts of Germany, may be thus described:—When the heavens are quite clear, the usual blue colour is not so bright, but has a more whitish, or even dirty appearance. The blue disappears a few degrees above the horizon, and there we perceive a sharply defined ring quite round the horizon, of a dirty reddish brown colour. The summer clouds, which are—at least, in their upper portions—generally white, have more of a reddish tinge, while the sun itself has the same, more especially when near the horizon, when it is deep blood-red. The light of the sun moreover is so much diminished that we can look at it with the naked eye, even when high in the heavens. Distant terrestrial objects appear dim and as if covered with a bluish veil.

Sometimes these appearances become exceedingly striking, as during the year 1783, the fog was so intense in some places, that objects at a distance of a quarter of a mile could either not be seen at all, or if visible were quite indistinct. The sun was red, and its light feeble, so much so, that at the periods of sunrise and sunset it could not be seen. It appeared first in Copenhagen, on the 29th of May, and gradually spread over the whole of Europe; so that between the 10th and 18th of June, it was

observed in most parts of France, Germany, Italy, and the Netherlands. A few days later, it appeared in Norway, on the Alps, in Moscow, in Siberia, and even in Syria; the Adriatic was covered with it, while it extended about 50 miles into the Atlantic. The same appearances were observed in England; and it was found that neither wind nor rain was able to dissipate the fog, although it appeared to become somewhat less dense after a severe storm.

Towards the end of June it began to get thinner, but soon returned again worse than ever, and remained till the end of July. It then disappeared, but returned occasionally in some places to a greater or less extent. In some places it remained, with interruptions, up to the beginning of October. Its disappearance in different places was not attended by similar occurrences. In some, it seemed to vanish of itself; in others, after a fall of rain more or less violent, so that its removal cannot be referred to the same cause.

The fogs of 1783, and that of 1834, might be supposed to be similar to the ordinary ones that we so constantly see; but when the state of the atmosphere is examined, as regards moisture, it is found to be excessively dry, and consequently these fogs must be of a very different nature, and have therefore received the appellation of "dry fogs."

The phenomenon has been, like all those of difficult explanation, referred to electricity, more especially as the storms that occurred during the prevalence of the fog, in the two years above mentioned, were exceedingly violent; but as both those summers were exceedingly dry, and consequently the clouds very high, and in case of a flash of lightning passing from the clouds to the earth, there must necessarily be a much greater quantity of electricity to produce the effect, when the clouds are high, than when they are low, it does not seem as if there were any ground for giving an electrical character to the phenomenon, especially as we know of no effect produced by electricity of a nature at all similar.

A peculiar smell, said to resemble that of sulphur, was observed in many parts of Holland (1783), and an attempt was made to show that it depended on the presence of sulphurous acid in the atmosphere, as coloured goods exposed to the sun were either bleached, or at least had their colours altered. From various circumstances, however, which our space will not allow us to mention, it appears that this bleaching was produced by other causes.

Vegetation was stated to have suffered materially from the prevalence of the dry fog; but as the summer, except for occasional thunder-showers, was excessively dry and parching, it does not seem as if the fog were instrumental in producing any such ill effects.

Many similar appearances have been observed, but with less intensity. Thus, in 1820, in Holland; in 1821, in England; and in 1824, in Hildburghausen, where it had the smell of coal smoke, and lay so thick over the town that the police searched every house for the suspected fire. In 1834, in May, it was exceedingly strong in parts of Germa-