of the greater portion of the partitions separating the chambers, pillars of chalk only being left to support the roof. The usual height of denehole chambers may be said to be from ten to twenty feet. A leading characteristic of denehole is the separation of each pit from its neighbor, though they are often so close together that much care must have been exercised to prevent intercommunication. Another is the fact, that, while they are here and there abundant in bare chalk, they are often especially numer-

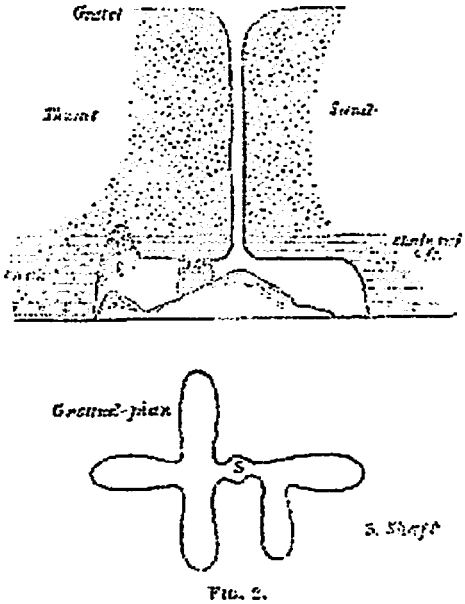

Fig. 2.

ous where the top of the chalk is fifty to sixty feet below. Thus at Hangman's Wood, for example, the top of the chalk is fifty-six or fifty-seven feet below the surface, while there is plenty of bare chalk within a mile.

Though there are more than fifty separate denehole in Hangman's Wood, each shaft being at an average distance of about twenty-five yards from its nearest neighbor, only five shafts are now open, the rest having fallen in at various times. In most instances, however, there is nothing to suggest that the chambers below have been materially, if at all, injured, the funnel-shaped hollow at the surface being but little greater than those around the mouths of shafts still open. This closing of the great majority of the shafts is not by any means simply disadvantageous to denehole explorers, though it certainly increases the cost of exploration; for it is obvious that closed pits necessarily afford more satisfactory evidence than such as have been visited from time to time, either from curiosity or to recover a lost sheep or hound.

Preliminary examinations of six of the denehole in Hangman's Wood were made during the summers of 1882 and 1883. A more thorough investigation is now in progress.

RECENT AFRICAN EXPLORATION.

No news has been received at Zanzibar from Giraud since he was deserted by his caravan. A number of the deserters have been arrested and imprisoned under grave charges, but their trial will be deferred until some definite information of the traveller's fate has been received. The French consul asserts, with reason, that an example must be made if it proves that Giraud has been betrayed: otherwise there can be no safety for future explorers.

The distressing news has been received of the total destruction by fire of the fine establishment of the missionaries du Saint-Esprit at Mrogoro. They were left without food or clothing, and the result of their severe labor for two years was destroyed at one blow. The fire would seem to have been accidental: since the natives about them are friendly, and have modified, at the suggestion of the missionaries, many of their savage customs, especially that of human sacrifices, which a year ago were common. Assistance has been sent to the sufferers.

From the Zambezi, news of the death of Commander Foot has been received. It occurred at Blantyre, where he had been appointed English consul. His wife and two children, unable during the prevalent disorders on the upper Zambezi to reach the coast, have taken refuge at the Protestant mission at the junction of the Rno and Sheri rivers. The deceased was well known in connection with African exploration, and especially with routes of trade and travel in central Africa.

Mr. Hore of the English missionary society has recently started for Ujiji, with his family, a considerable caravan, and two young missionaries, who will assist him in his work.

Some time since, we referred to the operations of Paul Soleillet in the region of Shoa, and his success in establishing friendly relations with King Menelik. The traveller, who left France about three years ago, has now returned to civilization, and, at a recent séance of the Société de géographie, gave interesting details of his journey, and of the character of the region explored by him in the interests of French commerce. The port of Obok, opposite the English military station of Aden, has been occupied by France since 1858, but has only been raised to the rank of a naval coaling-station during the past year.

Behind Obok rises the irregular surface of the Ethiopian highlands, extending westward to the Nile, and southward to the little-known region which encloses the great lakes of equatorial Africa. At different altitudes on its ridges, which rise from five thousand to eleven thousand feet, one finds a succession of all the climates of the torrid and temperate zones. The olive, cypress, indigo, and coffee plants grow wild there: while cotton, sugar-cane, the vine, and cereals are successfully cultivated. In the same regions where the elephant, buffalo, and rhinoceros flourish in a state of nature, one finds innumerable herds of cattle, sheep, and horses. Soleillet succeeded in opening a caravan route to Kaffa by way of Shoa, which is subject to the usual objections of time and