

far south. Ndoruma wished him to remain some time at his village, and therefore Junker resolved to set up a station there for the coming months. With the help of Ndoruma's people, who were despatched to the work by hundreds, he was able to erect good substantial dwellings, which were surrounded by a high stockade to keep off the leopards which abound in this country. He staid here until August, when he left his companion, Bohndorff, in charge of the station, while he travelled south with only twenty bearers. He crossed the Welle and traversed the land of the Mangbatu, where he made friendship with the chief Mambango, and returned in December to Ndoruma. But as the best season for travelling had approached, he did not rest, but started in January, 1881, by a new road to the south-west, the country of the A-Madi, crossed the Welle there again, and obtained, though with the greatest difficulty, the necessary number of bearers among the A-Barambo; these, however, robbed him of part of his goods; and it was only with the help of Sasa, a friendly Niam-Niam chief, that he safely returned to the A-Madi country north of the Welle. At the end of April he sent Bohndorff with the baggage, under the care of Sasa, into the latter's country south of the Mbomo, where he was to establish another permanent station. In the mean time war had broken out between the Mangbatu and Emin Bey, the governor of the Equatorial Province, but by Junker's mediation further hostilities were prevented. This, however, detained him until the end of November, 1881. Then he made another start, and was almost uninterruptedly on the way up to June, 1882, exploring the region south of the Welle and Bomokandi. He was kindly received by the Niam-Niam chiefs Bakangai and Kana, whose villages are situated south of the Bomokandi, whence he turned north and reached Semio, north of the Mbomo, where his station had been meanwhile established, in September, 1882. Here he had the misfortune to lose a great part of his valuable property by fire. Bohndorff, who had frequently been sick, wished to return to Europe, and therefore Junker packed his collections and sent him to the Bar-el-Gasal Province, where, in the mean while, Lupton Bey had become governor. But at this time the Dinka tribes revolted against the Egyptian Government; and thus Bohndorff, being unable to reach Meshra-er-Rek, was compelled to return to Semio. This was in October, 1882, the commencement of long and bloody wars in the Bar-el-Gasal territory, on which finally the invasion of the Mahdi's troops followed.

Before Bohndorff's return, Junker had started on an extensive journey west. He reached the Welle, near the mouth of the Werre and Mbima, and traversed the territory of the Bandjia, who, though speaking a dialect of the Niam-Niam language, pretend to be of an independent descent. The islands of the Welle are inhabited by the A-Basango, who speak a distinct language. After having reached Ali-Kobo, he turned north, crossed the Mbomo, ascended the Shinko, and returned to Semio by way of Mbanga. He arrived on May 1, 1883.

He now regarded his travels as finished, and intended to start for the Bar-el-Gasal, where Bohndorff had gone a short time before, as Lupton Bey hoped that the route to Meshra-er-Rek would be open. But, although Lupton called in all the outlying garrisons on the Welle, he did not succeed in putting down the Dinka, who afterwards were joined by the Nuer, Agar, and other tribes. This war lasted eighteen months, and was far more bloody and exhausting for both parties than the later engagements against the troops of the Mahdi in Emin Pacha's province. Finally the Dinka were supported by the Mahdi's forces; and Lupton, betrayed by those about him, was compelled to deliver his province without resistance to the emissary of the Mahdi, Emir Karm Allah. Junker says that the chief cause of this surrender is to be sought in the fact that Lupton had almost exclusively irregular troops at his disposal, consisting of Dongola people and Arabs of all kinds. In October, 1883, the state of Lupton's troops was very precarious, and he sent a letter to Junker entreating him to persuade the chief Semio to collect about a thousand of his people with spear and shield, as well as all those who had guns, and come to his help. He said, "I now see no other way of putting down the insurrection than by the help of the Niam-Niam chiefs. Do every thing in your power to persuade Semio to lose no time, and send him to meet me as soon as possible."

As Junker saw the routes north closed, he resolved to go east to Lado. He left Semio in November, 1883, and reached Emin at Lado in January, 1884, after fifty-five days' march. During this time Bohndorff was able to reach Khartum with the steamer, returning thither at the end of December, but all collections remained behind.

Emin Pacha's province had been quiet up to the first months of 1884; but the successes of the Dinka were too tempting for the other negro tribes, and so in the Equatorial Province the rebellion assumed more formidable proportions. Emin was compelled to give up all stations east of the Nile and to concentrate his troops. On the 27th of May he and Junker received letters from Lupton Bey and Emir Karm Allah, which contained the news that the province had fallen into the hands of the Mahdi, and the demand to surrender the Equatorial Province. Emin answered the Emir's letter, saying that he was ready to deliver the province into the hands of the representative of the Mahdi in order to prevent useless bloodshed, and till his arrival he would try to hold the province for the Mahdi. Meanwhile a defence was organized, and the outlying stations were called in. But it was not until January, 1885, that the troops of the Mahdi attacked Emin's province. After they had taken the station Amadi in April of the same year, they retreated, for unknown reasons, by forced marches, to the Bar-el-Gasal region. Since that time Emin's province has been unmolested by the troops of the Mahdi. On Jan. 2, 1886, Junker left Emin Pacha and Casati, going south. He crossed the Mvutan Nsige to Kibiro, and went to Kabrega, king of Unyoro. Here he learned by letters from Zanzibar of the events in the Sudan, of King Mwanga's hostility towards the Europeans, and of Dr. Fischer's unsuccessful expedition sent out by Junker's brother to seek him. In the mean time war had broken out between the Waganda and Wanyoro, and it was not until June that he received permission to enter Mwanga's capital. It took him a month and a half to cross the Victoria Nyanza; and at last Tabora was reached, whence he proceeded with one of Tippo-Tip's caravans to Zanzibar.

Thus his eventful wanderings in Central Africa were ended. It is hardly necessary to mention the importance of his explorations, which cover a large area, and of his interesting observations on the tribes with whom he lived for so long a time. The loss of his large collections will be regretted by naturalists and ethnologists, but nevertheless we should be glad that the enterprising traveller succeeded in extricating himself from the innumerable dangers and difficulties surrounding him.

BOOK - REVIEWS.

Report of the Committee on Disinfectants, of the American Public Health Association. Concord, N.H., Republ. Pr. Assoc. 8°.

THE report of the committee on disinfectants, of the American Public Health Association, presented at the Toronto meeting in October last, has just been printed. It deals with the various apparatuses now in use in this country and Europe for disinfection by means of heat, and is abundantly illustrated. The experiments of this committee have demonstrated that the most efficient non-destructive disinfectants are, (1) steam under pressure at 110° C. (230° F.) for ten minutes, (2) dry heat at 110° C. (230° F.) for two hours (in the absence of spores), (3) boiling in water for one-half to one hour. It will be seen from this that the apparatus for disinfection by heat may be divided into three classes: (1) that in which dry hot air is employed, (2) that in which hot moist air is used, and (3) that in which steam is the disinfecting agent. In the disinfection of mattresses, feather beds, etc., where great penetrating power is required, dry hot air cannot be relied upon. In addition to this, there is another objection to the use of this agent, — that, when the temperature is sufficiently high to act as a disinfectant, certain articles are permanently injured by it. The committee expresses its conviction that the use of steam, and especially when superheated or under pressure, is the most efficient agent for the destruction of all sorts of infectious material. At the Boston quarantine station, Dr. S. H. Durgin, president of the Boston board of health, and a member of the committee, has been employing moist heat for disinfecting purposes since the spring of