while sometimes such English words as "insect," "spider," "scorpion" will be in one form of type, and sometimes in another. These are trifles, but still they are worth attending to, and they do not detract from the general merit of this translation, which we would freely place in the hand of any student.

Bosnien, Land und Leute. By Adolf Strausz. 2 vols. (Vienna, 1882-4.)

AFTER the occupation of Bosnia and Herzegovina by Austria in 1878, the want of an authoritative and comprehensive treatise on those hitherto neglected provinces of European Turkey soon became manifest. This want is fully supplied by the present work, on which the author has been engaged for the last four years, and for the composition of which he has qualified himself by repeated visits to the region he has undertaken to describe. The first volume, issued two years ago, is mainly historical and ethnographic, and embodies a complete history of the country, from the arrival of the Slavs in the fifth century, down to the Austrian occupation in 1878. Special sections are devoted to the various ethnical elements, Mohammedan and Christian Bosnians, Jews, Albanians, Zinzars, and Gypsies. These are all adequately treated, except the Zinzars (Macedo-Roumanians or Kutzo-Vlacks), the account of whom is confusing and even contradictory. The author seems unaware that their true relations to the surrounding populations, and especially to the Roumanians, now settled in Moldavia and Wallachia, north of the Danube, have been placed in a clear light by the recent investigations, especially of Roesler and P. Hunfalvy. The volume concludes with a series of social sketches, in which the habits and customs, legends, traditions, religions, national aspirations of the people are ably dealt with. The second volume, whose publication was delayed by various causes till the present year, is perhaps the more important of the two. It contains a complete description of the provinces, their geographical features, climate, fauna, flora, natural and industrial resources, administration, present condition and future prospects. On all these points the author speaks with great authority, and brings together a vast amount of information at first hand. Although bitterly opposed to the Austrian occupation, he believes that the inhabitants will eventually acquiesce in a step which political considerations had in any case rendered inevitable. The area of the country is given at about 52,000 square kilometres, an estimate based on recent but still incomplete surveys. The population, given by the Salname of 1877 at 2,047,000, was reduced by the census of 1879 to 1,158,000, of whom 448,000 were Mohammedans, 496,000 Orthodox Greeks, 209,000 Roman Catholics of the Latin rite, and 3400 Jews. The work unfortunately appears without either map or index, for which two meagre tables of contents are poor compensation.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.*]

The Solar Corona and After-Glow

THE inclosed extract from a letter from the Rev. A. W. Heyde, resident at Kailang in Lahoul, a hill state in the North-West Himalaya (N. lat. 32° 34′ 10″, E. long. 77° 4′ 10″), 10,000 feet above sea-level, gives an interesting notice of the solar corona and after-glow, and affords some reason for the inference that the conditions producing these appearances have been persistent, although they may not have been observed in the cloudier and more hazy atmosphere over the plains of India. Mr. Heyde's letter is dated November 3:—

"The corona round the sun has been visible since my last letter to you in July, whenever the sky was clear. It was not always equally distinct, but never entirely absent. It is beautifully distinct to-day. The same has been the case with the after-glow, which no doubt results from [the same conditions as] the corona."

The following extract from the same letter is also of interest:—

"I think I have mentioned already, in former letters to you, that since about twelve or fifteen years the latter half of August and the whole of September and October have become very unsettled as regards the weather, rain or snow occurring now often during these months, which, as a rule formerly, were a time of fine, clear weather. These untimely precipitations interfere very unpleasantly with the haymaking and harvesting in the valley now nearly every year, of which many complaints are heard. . . . A similar experience is made in Ladak and other parts of the Western Himalayas. Officers who took part in the triangulation of Ladak during the four or five seasons between 1860 and 1870 say they never could have done their work if at that time the sky over Ladak had always been so cloudy, and the high ranges so frequently enveloped in clouds, as is now the case."

In corroboration of this last remark I may mention that the hopes that had been entertained of obtaining a valuable series of actinometric observations at Leh, for which purpose two trained observers were deputed to that station rather more than a twelvemonth ago, have been so far grievously disappointed. The atmosphere of Leh was believed, on the reiterated assurance of former residents, to be remarkable for its clearness and freedom from cloud and haze. From the actinometric registers received during the past year, and the notes which accompany them, this appears to be very far from the case.

HENRY F. BLANFORD

Meteorological Office, India, 4, Middleton Row, Calcutta, November 21, 1884

Flying-Fish do not Fly

FLYING-FISH *are incapable of flying* for the simple reason that the muscles of their pectoral fins are not large enough to bear the weight of their body aloft in the air. The pectoral muscles of birds depressing their wings weigh, on an average, $\frac{1}{5}$ of the total weight of the body, the pectoral muscles of bats $\frac{1}{13}$, the muscles of the pectoral fins of flying-fish only $\frac{1}{35}$. The impulse to which flying-fish owe their long shooting passage through the air is delivered, while they are still in the water, by the powerful masses of muscle on both sides of their body, which are of much greater breadth than in the case of the herring or any other fish of their own size.

The "flickering of the fins," which Dr. John Rae (NATURE, December 4, p. 102), like many others before him, takes for a rapid muscular movement of the pectoral fins, is only a vibration of their elastic membrane, and is to be referred to the same laws as those which govern the flapping of a tight-set sail when a ship under a stiff breeze is driving close to the wind. The flapping or vibration at once springs up whenever the sail gets parallel to the wind.

The more rapidly a flying-fish darts out of the water, the greater is the momentum with which the air presses on its outspread pectoral fins. Should, now, the atmospheric pressure induce these fins into a horizontal position parallel to the wind, their vibration is a necessary result. Let the outspread pectoral fins of a dead flying-fish be held horizontally before the opening of a pair of bellows, and the fins will be seen to vibrate as soon as the current of air passes under them. For full proofs of the accuracy of these propositions I beg to refer to my paper, "The Movements of Flying-Fish through the Air" (Leipzig, 1878).

Zoological Institut, Kiel, Dec. 15, 1884 K. MÖBIUS

Iridescent Clouds

IN addition to the particulars given in NATURE for December 18, 1884 (p. 148) of the brilliantly-coloured clouds, the following observations made here may be interesting. They were visible every day from the 6th to the 13th instant, except it be on the 9th, and at all times of the day, but only strikingly noticeable near sunrise and sunset. The colours did not appear