travel to the upper surface of the metal is so short that it does not have opportunity for complete reduction and slagging. Now iron-oxide can only remove silicon by being reduced by it, or by combining with already formed silica and thus preventing its reduction. Its appearance in the flame of the Clapp-Griffiths converter at a period when it is absent from that of the ordinary converter may indicate, not that it is formed more copiously, but that it is reduced and slagged less completely in the former than in the latter.

3. It has been attributed to the partial removal of the slag (whose silica might have been reduced had it remained as it does in the ordinary converter) during the converting operation. But the slag can be removed from the ordinary large rotating converters as well, and without serious expense or trouble, by turning them down 90° and skimming it at any desired stage of the process.

4. Finally, there are scoffers who say, "We believe that the removal of silicon bears the same relation to that of carbon in your converter as in the ordinary converter. Your analyses, apparently intended to show that your converter specially favors the removal of silicon, do not even point in that direction. The ductility of your phosphoric steels is indeed due to their being uniformly low in carbon and silicon. But this in turn is due to your admitting the blast so slowly towards the end of your operation that you can hit the point of complete removal of carbon and silicon more accurately than we can in our large converters with our present practice of blowing rapidly to the very end. But many feasible plans at once suggest themselves by which we may accomplish this in the ordinary converters. Creditable statements that at least one large scale Bessemer works is actually producing steel as uniformly low in carbon and silicon as yours, strengthen this belief."

It is too early to decide positively which, if any, of these explanations is the true one. If any of them be, it is highly probable that the excellent metallurgical results of the Clapp-Griffiths practice will be successfully imitated by the large Bessemer works.

The validity of the claim that the Clapp-Griffiths steel is superior to that of identical composition made in the ordinary converter can only be admitted on the production of far more conclusive evidence than has yet been offered.

HENRY M. HOWE.

ACTIVITY OF THE MIND DURING SLEEP.

IN connection with the present activity in psychical research, the following extract from the recently published 'Life of Agassiz' (Boston, *Houghton, Mifflin & Co.*) is of interest:—

"He [Agassiz] had been for two weeks striving to decipher the somewhat obscure impression of a fossil fish on the stone slab in which it was preserved. Weary and perplexed he put his work aside at last, and tried to dismiss it from his mind. Shortly after, he waked one night persuaded that while asleep he had seen his fish with all the missing features perfectly restored. But when he tried to hold and make fast the image, it escaped him. Nevertheless, he went early to the Jardin des plantes, thinking that on looking anew at the impression he should see something which would put him on the track of his vision. In vain,—the blurred record was as blank as ever. The next night he saw the fish again, but with no more satisfactory result. When he awoke it disappeared from his memory as before. Hoping that the same experience might be repeated on the third night, he placed a pencil and paper beside his bed before going to sleep. Accordingly, toward morning, the fish reappeared in his dream, confusedly at first, but, at last, with such distinctness that he had no longer any doubt as to its zoölogical characters. Still half dreaming, in perfect darkness, he traced these characters on the sheet of paper at the bedside. In the morning he was surprised to see in his nocturnal sketch features which he thought it impossible the fossil itself should reveal. He hastened to the Jardin des plantes, and, with his drawing as a guide, succeeded in chiselling away the surface of the stone under which portions of the fish proved to be hidden. When wholly exposed, it corresponded with his dream and his drawing, and he succeeded in classifying it with ease. He often spoke of this as a good illustration of the well-known fact, that when the body is at rest the tired brain will do the work it refused before." (p. 181.)

DEATHS FROM WILD BEASTS AND SNAKES IN INDIA.

From time to time the Indian government issues reports on the yearly loss of life by snake-bite and wild beasts,—reports which still show a frightful mortality from these causes, and afford significant evidence that the present precautions and exertions of the government in this direction still fall wide of their object. The latest intelligence in the *Gazette* states that in 1883 about 22,000 men died from the above mentioned causes. The returns from the district authorities can by no means be considered complete and satisfactory, since in consequence of the apathy of the natives and the almost universal belief among them in kismet, or predestination, many cases are not reported at all

Translated from *Das ausland.*