

each other in dodging it. The expression used by them was "Marndwullun no good for fight; if he no hit 'em man, might come back and hit your friend beside you." I questioned the black fellows as to whether they thought a boomerang could be thrown so as to return to the hand of the thrower. Seven said "no," and characterised the statement as "jetbollar," i.e. a falsehood; the eighth said he once made a boomerang that when thrown on a calm day with great care would gyrate round and round until it descended to the ground not far from him, moving as slowly as a leaf falling from a tree, and that he once ran forward and nearly caught it. He said also "no Kurni (black fellow) can catch a wunkun when he flying—he would cut his hand open."

All the black fellows were unanimous in stating that a boomerang when it has struck anything ceases its course.

I have now stated all that at present suggests itself as to the boomerang. I fear that I may have trespassed too much on your space and on the patience of your readers.

Bairnsdale, Gippsland, Victoria, ALFRED W. HOWITT
March 3

Fertilisation of Flowers.—The Cuckoo

As a fact interesting in connection with the fertilisation of flowers, I have observed that in *Scabiosa arvensis* the stamens are elongated and the anthers ripened successively—not simultaneously—in each individual floret, the first having fallen off the filament, while the fourth is yet colourless and curled up in the tube of the corolla, the other two being in intermediate stages of development.

May I also state in reference to the Cuckoo, that a rhyme well known in Somersetshire, runs thus:—

"In April, come he will,
In May, he sings all day,
In June, he alters his tune,
In July, he prepares to fly,
In August, go he must."

By which it is clearly not meant that the Cuckoo ceases to sing in that part of the country at Midsummer. This break of note in June is generally to be noticed about the middle of the month. I, this year, heard it for the first time on the 28th May.

Ealing CHAS. FRED. WHITE

The Cuckoo

IN connection with the notes of Mr. Adair and Mr. Joyner in NATURE of July 6th and 13th, let me record that the Cuckoo has not even yet left us in the Midlands. I heard it only last evening near to my own house. There is a popular rhyme, long current in Derbyshire, concerning this bird. One couplet tells us the Cuckoo may be heard

"In April, May, June, and July,
If she sings any longer she'll tell a story;"

so that even this rude rhyme shows that it is not expected to depart earlier than this month. LLEWELLYN JEWITT

Winster Hall, Derbyshire, July 15

ABSTRACT REPORT TO "NATURE" ON EXPERIMENTATION ON ANIMALS FOR THE ADVANCE OF PRACTICAL MEDICINE¹

IV.

Experimentation for Determining the best means of Restoring Animation after some Forms of Accidental Death.

THE frequent occurrences of death from the administration of chloroform and other agents of the anæsthetic series led me very early to experiment for the purpose of discovering the best means of restoring life after such accidents. I commenced this research in 1851, and have continued it up to the present time. I consider it to have been one of the most fruitful in useful practical results. The details of the work have been communicated at various times to the world of science, and at considerable length. They formed the subject of a special report to the British Medical Association at its meeting in London in 1862. They formed the subject of a report to the Royal Society in 1865. They were con-

tinued in the Croonian Lecture delivered before the same Society in 1873, and they were introduced into various lectures on experimental and practical medicine, and into reports on the physiological action of organic chemical compounds made to the British Association for the Advancement of Science.

As the account of these inquiries covers a great deal of ground and brings into light many curious and interesting topics, I shall devote a little extra time to the abstract of the experimentation.

Method of Experimental Research.

The mode of experiment in this research has consisted chiefly in testing the action of the narcotic vapours; the vapours of chloroform, ether, nitrous oxide, carbonic acid, choke damp, carbonic oxide, hydrocyanic acid, methylal, chloral hydrate, and others similar. Some inquiries have also been made relative to instant death by mechanical and electrical shocks, and to death by drowning and cold.

In every case the animal has been submitted as painlessly and rapidly as possible to the process which we call death. The rapidity and painlessness were essential to the experimental inquiry; because the more rapidly and the more placidly the animation is suspended, the less is the body exposed to the risk of organic injury.

In the course of observation two steps have been followed.

I.

In the first line of inquiry the animals have been allowed to die without any attempt to restore life, the object being to ascertain why death took place. After death the organs of the body have been examined in order to determine what was the action of the destroying agent on them. How did it arrest the living action?

The first question asked had relation to the condition of the lungs:—Were they left bloodless, containing some blood, or congested with blood? The second question had relation to the heart:—Were its cavities left full, or empty of blood; were they distended or collapsed; was the blood left in the cavities of natural or unnatural colour; were the muscular walls of the heart still excitable to motion, or were they quite inactive; if the muscular walls were inactive were they rendered inactive by rigidity of contraction or by relaxation? The third question had relation to the blood:—Had the blood undergone coagulation, and if it had not at the time when the examination was made, how long a time elapsed for the completion of the process? What was the condition of the blood corpuscles; were they scattered or massed together, were they perfect in outline or irregular? What was the colour of the blood on the two sides of the circulation; was the venous blood darker than the arterial, or were the two kinds of blood mixed in respect to colour? Were any gases escaping from the blood or had any escaped? Had the fibrine escaped from the other constituent parts? Had the blood accumulated in any of the vascular organs, or had it exuded from its vessels in whole or in part? The fourth question related to the state of the nervous organs, the brain and spinal cord:—Were these organs congested or free of congestion? Was there any effusion of blood or of serum into them? Was the appearance of the white and grey matter natural or morbid? Were the membranes vascular or pale? The sixth question had relation to the state of the visceral organs in the cavity of the abdomen:—Were the kidneys free of congestion, or were they congested? Was the colour of the intestines natural? Were the liver and spleen congested or free of congestion? The seventh question had regard to the muscular system:—How long a period elapsed before the muscles became spontaneously rigid? After what modes of death from the different agents did the muscles continue most active under the influence of the galvanic current? What sets of muscles first ceased to respond to the current, the muscles of respiration or the muscles of

¹ Continued from p. 199.