

**A KANGAROO AT THE ZOOLOGICAL GARDENS, LONDON.**

Sundry interesting additions have lately been made to the already representative collection of living birds and animals at the Zoological Society's Gardens in Regent's Park. A fine specimen of the rare Occipital vulture, two specimens of Burmeister's Seriema, some curious Albino peafowl of South African origin, and several bustard quails as to whose exact classification opinions differ, are among the most important of recent recruits to the aviary. These have been acquired by purchase, and therefore, for the average Londoner, a more peculiar interest attaches to the birth at the "Zoo" of the first baby kangaroo of the brush tailed rock species that has yet been brought into the world within its hospitable confines. Up till the present year the animals of this particular species—*Petrogale Penicillata*—have refused to breed, although the other branches of the kangaroo family have been, fairly prolific. The brush tailed rock kangaroo dwells chiefly in rough, rocky country, and is therefore more thick-set in build than many of its cousins, while its sturdy, brush like tail plays an important part in its agile movements. We are indebted for the cuts and copy to the Illustrated London News.

**"Barisal" Guns in Gippsland, Australia.**

BY THOMAS O'BRIEN.

During a residence of several years in the Gippsland district of the colony of Victoria, Australia, while principally engaged in gold mining and prospecting for gold and tin, I have repeatedly noticed those mysterious reports or discharges.

The Gippsland country may be briefly described physically as a mountainous tract of land on the southeastern slope of the Australian Alps. It is fringed on the coast line by a strip of low lying flat land, varying from a mile to fifteen miles in width, dotted with lagoons and indented by estuaries. The mountain ranges rise abruptly, and in places precipitously, from this narrow belt, and are broken at frequent intervals by deep and rapid watercourses, flowing generally southeasterly to the Indian Ocean. Geologically it consists, at the southern extremity (Wilson's promontory), of an immense granite upheaval, with an adjacent stratum of marble at the extreme southern point; to the north of the promontory the granite is overlaid successively by rocks of the Upper Silurian period, old Devonian sandstone, broken coal beds, and metamorphic shales and sandstones, which crop out here and there all through the Tonis Cap range in south Gippsland. North or Upper Gippsland shows indications of great geological disturbance, even within comparatively recent periods. Though the general high level of this part of Gippsland seems to have permanently obtained, as shown by the absence of many of the intermediary strata, the granite substratum is broken by dikes of gneiss and porphyry (some of this porphyry is very beautiful); then immense beds of volcanic drifts, molten into solid masses as hard as even the porphyry, fill up great chasms adjacent. The unbroken portions of many of the high peaks are covered, in a north and south line for sixty or seventy miles, with a metamorphosed drift of almost pure silica, the pebbles in which are as round as marbles, with the heavy drift below, and the light above, as in ordinary stratified drifts, while the mass, to a casual observer, looks just like a solid body of quartz lying on the granite rock below. Now, all through this region, both north and south, I have heard those strange noises, but most frequently around Cobena Creek, in North Gippsland. My first experience of them, however, occurred on Stockyard Creek, in South Gippsland, where the miners were often startled by them. Two days in particular, in the early summer of 1879, will be always remembered by them. Almost precisely at noon on the first of those days, a deafening report was heard, which could be likened only to the explosion of a magazine; it brought every man below ground to the surface, as quickly as he could get, who was not already up for dinner. The explosion seemed to be in the direction of the Ophir mine, which lay about half a mile to the west of the main diggings, and as it was known that the "Kaffirs Company" had considerable dynamite stored in that vicinity for blasting purposes,

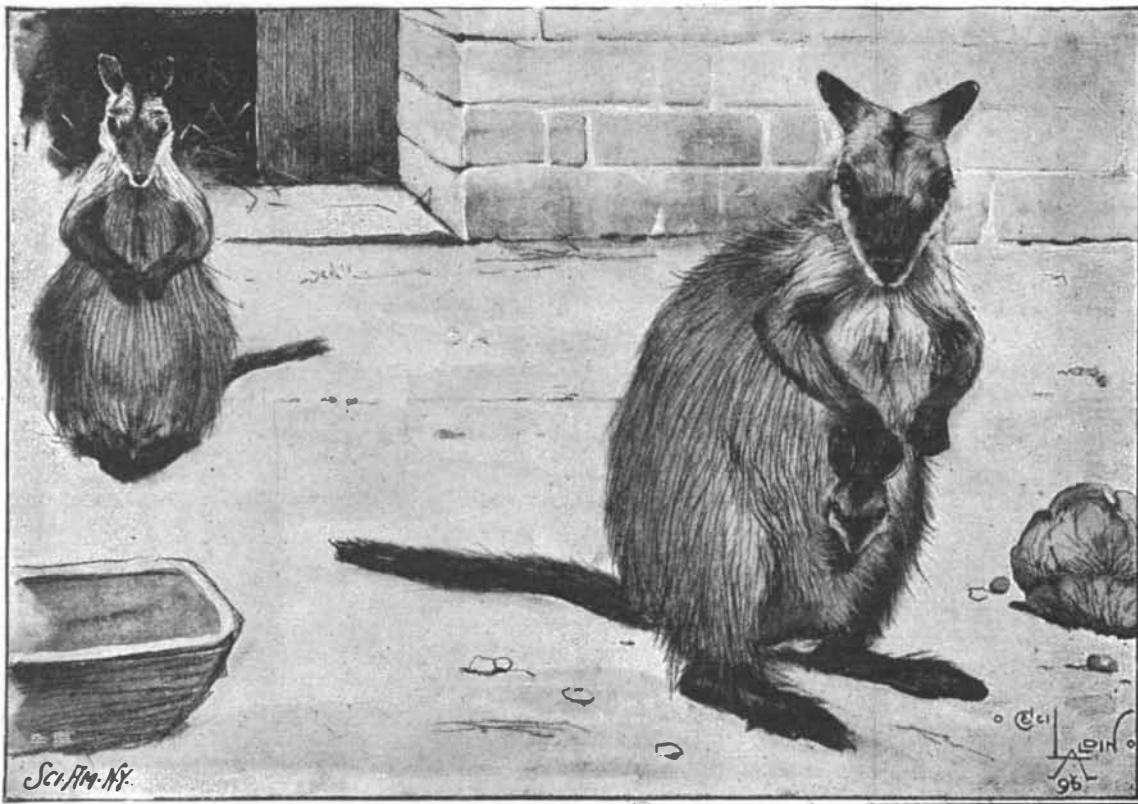
a general rush took place to render assistance or view the supposed ruins; but the magazine and the Kaffirs and the Ophir men were all there and all right, so the crowd returned, but awestruck, excited, and wondering. The weather had been strangely oppressive for many days preceding this event, with a preternatural stillness in the air and a kind of haze over everything, the temperature varying but little night or day and ranging between 75° and 85°, which was not really unusually hot for the place and time of year; but its awful sameness was portentous, and old New Zealand diggers who were on Stockyard Creek at the time often remarked that it felt "earthquaky." This first explosion was variously attributed by the local contingent to the sudden escape of gases generated in the coal basin, the edge of which bordered the gold fields; to water pressure from the mountains above, and to the fall of an unseen thunderbolt. However this may have been, the second notable explosion, which occurred just two weeks after the first and also, by a singular coincidence, almost precisely at noon, left no room for argument, as it was evident from the severe shock of earthquake which accompanied and followed it that whatever caused the earthquake had also caused the explosion. The shock was extremely severe, the direction being from northeast to southwest, starting simultaneously with the report, with a quick horizontal movement which threw down nearly every dead tree on the flat. Many of them were 150 feet in height and 3 to 4 feet in diameter, and all fell in the same direction. Some of the green trees, too, which had not good, strong tap roots, were thrown down, and the whole forest swished and bent like willows, as though struck by a mighty wind. A large iron tank measuring 4 feet cube, and full of rain water, was moved

its of coal or lignite within many miles of us, we could not attribute them to explosive or escaping gases. They occurred at frequent but irregular intervals, and varied in tone, intensity, and volume from a boom like a heavy cannon, both close at hand and afar off, to the discharge of small arms, or a very peculiar, low, distinct, and extremely deceptive hiss, which often started some one of us in search of an invader of our solitude, to return as often disappointed. From the Franklin, we prospected into the wilder region of North Gippsland, but were not troubled much by any mysterious sounds until we reached Cobena Creek, where we made a camp and remained for about eight months. On a spur above one of the tributaries of this creek, which, by the way, is right in the heart of the volcanic region, with wildly picturesque scenery and steep acclivities, mountain tops strewn with huge, rugged granite masses and volcanic scoria everywhere, we found, in addition to some promising though not payable gold prospects, a very fairy land of "barisal" guns. The reports were very seldom much louder than the "ping" of a rifle, and never, at least during our stay in that region, followed by any symptoms of earthquake; but we heard them so often, sometimes twice or thrice in quick succession, and from such unlooked for places, that a superstitious man would certainly think them uncanny, and a timorous one, who knew the sound of a rifle, would as surely duck his head.

**Photometry of Colored Lights.**

An ingenious and simple method of comparing the luminosities of differently colored lights is described by Frank P. Whitman, in the Physical Review of recent issue. The principal on which Whitman's photometer is founded is due to Professor Rood. Rood prepared

about fifty gray disks differing successively in depth of tint from black to white. If a dark shade was combined with a light shade in the usual way and rotated rather slowly, the familiar unpleasant sensation known as a "flicker" was produced; but if successive pairs, more and more nearly alike, were chosen, the flicker became less, until it almost, or quite, disappeared. Nearly the same effect was produced if, instead of a gray, some other color was substituted on one of the disks. It was always possible to combine with it a gray disk of such a shade that the flicker nearly ceased, showing that this sensation is apparently independent of the wave lengths of the lights compared and dependent only on the relative luminosities. In Whitman's instrument a colored card and a white card are alternately exhibited to the eye of the observer. These cards are illuminated by lights of



**BABY KANGAROO, THE FIRST OF THE BRUSH TAILED ROCK SPECIES BORN AT THE ZOOLOGICAL GARDENS.**

bodily from the platform about one foot in height on which it stood, and deposited on the ground alongside. It was not overturned; the ground simply moved from under it and caught it as it fell. A very remarkable feature was that the trees were all thrown with their tops in the direction of the earthquake's path, while dead weights on or near the surface were, as it were, left behind by the moving earth and maintained their new position simply by friction. The trees, it would seem, while still supported by the earth around their roots, added the force of their own rebound to the return of the earth's vibration and so fell beyond their original position. A man standing on a stool white-washing a veranda was left standing on the boards below, with his brush still elevated and wondering what had happened to him. Another party was dropped down a shallow shaft in which he had just been working, as he was leaving for dinner. He landed bolt upright and shaken considerably by the drop. We did not lack for variety with our "barisal" gun experiences on Stockyard Creek for the next three or four months; though not in all cases accompanied by shocks of earthquake, we heard them at intervals during all that period, both at night and in the daytime, and it did not matter at what time of night a noise of that kind was heard, it brought every man on that diggings to his hut door to find out from his neighbors what was the matter, and nobody hurried to get to bed again. Subsequently I joined a party to prospect for tin on the Franklin River, some distance to the north of Stockyard Creek, all of whom heard there the same mysterious reports. The rock formation in that vicinity was almost wholly granite, and as there were no depos-

different intensities placed at opposite ends of a graduated photometer bar. By moving the support on which the cards are fixed along the photometer bar, a point is reached at which the "flicker" ceases. At this point the illumination of the white disk or card is taken to be equal to that of the colored card, and the relative intensity of the sources of light can be calculated. Of course, instead of a colored card a colored light may be subjected to measurement. This instrument is said to give results quite as good as are obtained when two lights of the same color are compared by the ordinary photometer.

LI HUNG CHANG submitted to a Roentgen ray examination at the Charlottenburg Polytechnic, at Berlin, on June 27. It showed the track of the bullet fired by the would-be assassin of the Chinese statesman at Shimomoseki, when the treaty between China and Japan was being arranged. The bullet entered the left cheek and buried itself in the tissues slightly below, where the bullet is now encysted.

PROF. J. H. MIDDLETON, director of the South Kensington Art Museum, an archaeologist of highest rank in England, died suddenly recently, and an inquest showed that he had taken an overdose of morphine, having been a victim of the morphine habit for years. He wrote an important book on "Ancient Rome," and had been Slade professor of fine art and director of the Fitzwilliam Museum at Cambridge University before receiving his last appointment. He was also one of the most important contributors to the *Encyclopedia Britannica*.