



Mr. Rudyard Kipling's New Story, "Kim." It is now known, wherever literature is spoken of, that CASSELL'S MAGAZINE is the fortunate possessor, for serial purposes in Britain, of Mr. Rudyard Kipling's new novel, "Kim." This story, the first Anglo-Indian novel our foremost writer has yet given us, will begin in the January number of CASSELL'S MAGAZINE, which will be published on December 19th, and run throughout the year. We feel sure that every friend of good literature will make this known wherever possible, and will not fail to follow

this most absorbing and truly brilliant work from the first page to the last. As a great demand for the January number is looked for, we cordially invite our readers to ensure their copies by an early intimation to the newsagent.

A New Gun Camera.

The brothers Kearton, who have won so much fame through their inimitable wild-bird photographs, have just invented a new gun camera, which a well-known optician has made for them. It has been designed to portray birds on the wing and animals in rapid motion. The telescopic-looking lens on the top is of the same focus as the lens affixed to the camera underneath it. Both are racked out by means of a handle underneath the camera, at the back of which is fixed a focal-plane shutter working up to the thousandth part of a second. When the photographer sees, say, a heron

flying past, as depicted in our second illustration, he raises his gun to his shoulder, finds and follows it with the telescope until he has secured his focus, and directly he has done so pulls the trigger governing the focal-plane shutter, and, instead of bringing to the ground a lifeless bundle of feathers, secures a permanent record of a flying bird.

At present only three of the navies of the Great Powers possess submarines, viz. France, Spain, and the United States. The latter nation has just purchased the submarine boat *Holland*, which they are fitting out as a submarine torpedo-boat destroyer. The *Holland* is 53 feet in length and 11 feet in width. Her outer covering is of strong steel plates, while she is pointed at the ends. Although so small—for she is decidedly not a large boat—she carries about 20 tons of machinery and fittings. When on the surface she is propelled



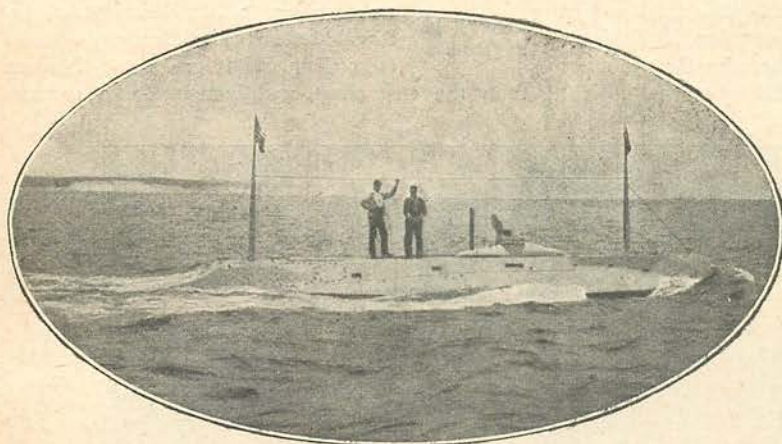
A NEW GUN CAMERA.

by a 50 horse-power gasoline engine, and when submerged the motive power is electrical. She is fitted with three discharge tubes for firing torpedoes, one of them being capable of throwing a 100 lb. gun-cotton shell a distance of three-quarters of a mile. The *Holland* can remain submerged with a

enables the leaf to throw off the excess of moisture which collects on it in the damp situations of the tree.

A Living Lamp.

It is well known that an ideal lamp would give us the maximum of light with the minimum of heat, like a glow-worm or a firefly, and an attempt has been made to utilise luminous bacteria to this end. M. Dubois cultivates photobacteria in various liquids and encloses the cultures in glass vessels, which yield a light about as intense as moonshine. He confidently expects to improve on his first results and actually give us a serviceable lamp of the kind. "Turn on the bacteria" would sound almost as well as "Let loose the gorgonzola."



THE HOLLAND SUBMARINE BOAT—AT SEA.

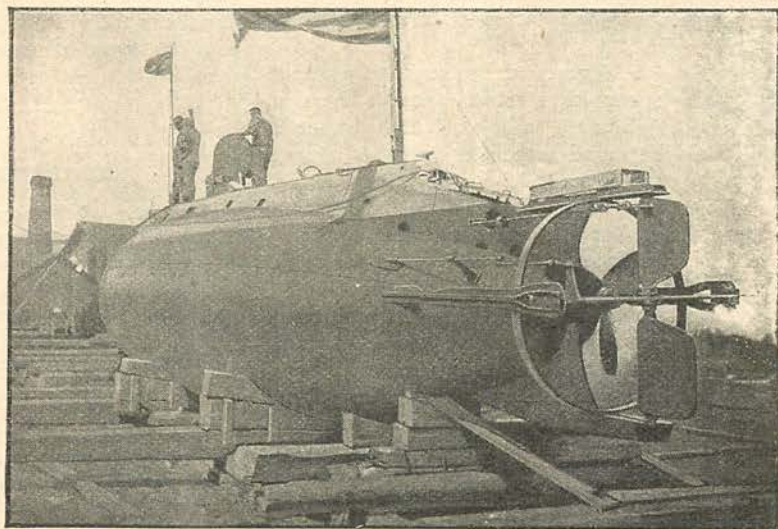
crew of eight men for thirty hours or more without suffering the least inconvenience. Her speed on the surface is 10 knots, and submerged 6 to 8 knots per hour. The boat has been purchased from its inventor, Mr. George Holland, by the United States Navy, for £30,000.

Why does the Aspen Quiver?

The light, quivering aspen, and eke the poplar, like everything else, are having their poetry destroyed by a base "profit-and-loss" utilitarian "scienner," as Carlyle would remark, but, after all, poetry is, or ought to be, able to protect itself, and a knowledge of the cause is not incompatible with a feeling of the effect. An aspen or poplar leaf trembles in the air owing to a flattening of the stalk at one part; but why does it quiver at all? Some think it is because the leaves would hurt each other if they were not lightly hung; but there is more sense in the new suggestion of Mr. Colbourn, of Hobart, namely, that the rapid movement in the air

A Mammoth Searchlight.

One of the chief attractions of Mount Lowe, the famous mountain summer resort of the *élite* of Southern Californian society, is the large searchlight on Echo Mountain, 3,500 feet above the level of the sea. It is termed the Great World's Fair Searchlight, for it was exhibited at that famous exhibition in 1893. It claims to be the largest searchlight ever made. It is of 3,000,000 candle power, and

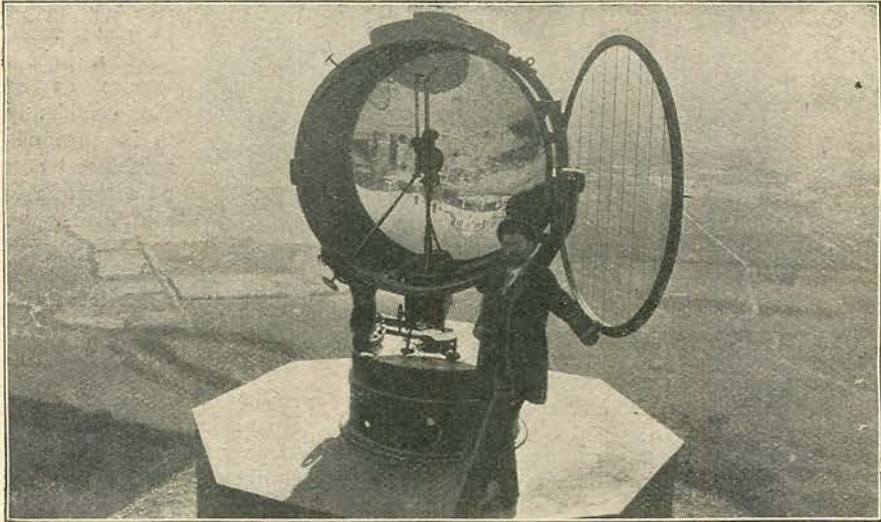


THE HOLLAND SUBMARINE BOAT—ON THE SLIPS.

stands on a wooden base, built in octagon form, which has a diameter of 8 feet. The searchlight itself stands about 11 feet high, and its total weight is 6,000 lb., yet it is so perfectly mounted and balanced that a child can move it. The reflecting lens is three and a quarter inches thick at the edges and one-sixteenth of an inch thick at the centre, and weighs 800 lb. The total weight of lens, ring, and cover is about 1,600 lb. It is so powerful that its rays can be seen for 150 miles away in the Pacific Ocean, while the beam of light

might be heard for several miles. The apparatus was recently tried, but owing to a hoarseness, from some mechanical influenza, it did not "orate" to the satisfaction of the inventors, and is in the doctors' hands at present; but we may hear more of it, perhaps too much, by-and-by.

Rainfall in England. According to Mr. Marriott, of the Royal Meteorological Society, the rainfall of England is greater on the west than the east coast, and increases with altitude



THE LARGEST SEARCHLIGHT IN THE WORLD.

is so brilliant that a newspaper can be read at a distance of 35 miles from the light. If one turns our illustration upside down the hotel lower down the mountain may be detected in the reflection.

The Talking Foghorn. A foghorn or "siren" that would speak in stentorian tones from a lighthouse, a fog-bound coast, or a ship, would be an advantage, provided, of course, that in the case of several being together they did not all speak at once. This novelty is promised us by Colonel Gouraud and Mr. Short, a Surrey mechanical engineer. The apparatus is called a "Gouraudphone" (pronounced "Goorophone"), not a "Shortophone" or a "Gouraudshortophone," and it operates by a telephone or phonograph plate vibrating under the voice, and working a piston-valve in a cylinder controlling a current of air or gas, entering another cylinder and vibrating a large diaphragm which gives out an imitation of the original sounds. The intensity of the sound can be increased by having more than one piston and cylinder regulating air currents, so that speech

above the sea. On the east coast the maximum at all heights is generally in October, and on the west coast in November. April and June are very dry months in the west, but from June to July there is usually a great increase of rainfall both east and west.

TO PHOTOGRAPHERS.

Illustrated contributions for this department of the MAGAZINE are invited by the Editor, who will be glad to pay for original paragraphs or photographs which are accepted. Out-of-the-way and curious natural phenomena and freaks of Nature, as well as portraits and views likely to be of topical interest two or three months after they are submitted, are sure of prompt and careful consideration.

Correspondents are requested, when applying to the Editor for the names and addresses of the persons from whom further particulars respecting articles may be obtained, to forward a stamped and addressed envelope for reply.