

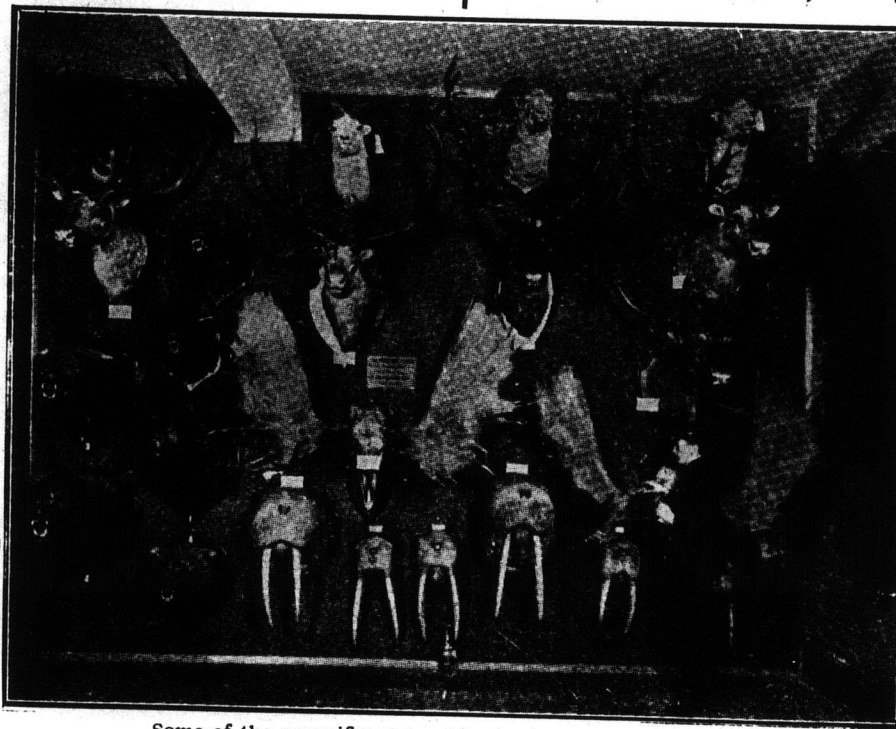


Moose.

men and in museums generally have been collected together either in the summer or early autumn, when the new pelage is short and scanty, and sometimes stained with earth. In the winter-killed sheep specimens of Mr. Reed the pelage is of maximum length. Indeed, on some of them it is so long as to almost mask the form and proportions of the head and face.

Of the six bear heads, five are of Alaskan brown bear of various ages and sizes, and one is of a large black bear. All were killed on the western slope of the Alaskan Peninsula in April and May, 1901. Three of the "big brown bear" heads are very large, said to be the finest examples of their kind in existence. The two fine heads of the Pacific walrus also deserve a mention. They are very large, but the tusks are certainly not of unusual size. The Pacific walrus is a far larger animal than its Atlantic relative, and its form is much more remarkable. Its most astonishing feature is the great height and enormous neck of the adult male, which really is most incredible until seen. Those under notice have a circumference at back of head of 53 ins. and 60 ins. respectively, and a circumference of muzzle of 45½ ins. and 46 ins. respectively.

Many notable sportsmen have contributed interesting and valuable trophies. Mr. Warburton Pike, an English sportsman, has sent a mounted head of that wonderful creature, the barren grounds musk ox. It was in 1889 that Mr. Pike penetrated the barren grounds north of Great Slave Lake to the home of the musk ox. He is said to be the first



Some of the magnificent trophies in the Reed collection.

sportsman who ever saw the barren ground musk ox at home, the first to describe the animal on its native heath, and map the lake region north-eastward of the Great Slave Lake. The terrible hardships endured by the daring explorer during his winter trip to the barren grounds, combined with a wealth of valuable observations, are recorded in his book, "The Barren Grounds of Northern Canada." Mr. Pike and his party secured several of these now rare and

prized heads, but had to abandon many of them as they fled southward to escape death from freezing and starvation.

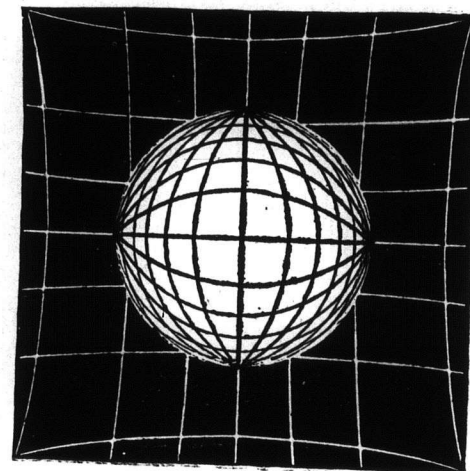
Then from Mr. George R. L. Harrison, Jun., of Philadelphia, well known to sportsmen in this country, and who has made two trips to the big game regions of East Africa in quest of sport, some twenty African trophies have been received, including species of the gazelle, a white-eared cob, a Coke hartebeest, and a magnificent specimen of the common waterbuck. In a like manner a fine collection of African horns, skulls, and head skins has been presented by Mr. John W. Norton, another well-known sportsman and a successful hunter of big game in Africa. His collection includes such rare heads as a greater kudu, an eland, a big roan antelope, and a Crawshaw waterbuck. From China an entire skin, skull, and horns of the takin, half goat and half antelope, and larger than a mule deer, has been received from the Hon. Mason Mitchell, certainly a rare and interesting species. Mr. William Jamrach, of London, contributes three sets of horns, namely, a

E. Radclyffe, has just shipped from Kashmir a 60-inch *Ovis poli* (mountain sheep); while the collection of trophies, principally from Somaliland and India, belonging to Mr. A. Donaldson Smith, has just been secured. Indeed, America's aim to possess a collection of heads and horns worthy of a great nation certainly looks like becoming an accomplished fact.

#### An Optical Illusion.

In a stereoscopic view two photographs, taken from two points not very far distant from one another, give the effect of relief when viewed through the instrument. It is commonly believed that this fact proves the necessity of binocular vision to obtain a relief effect. The following experiment shows that the same perception can be had with the use of one eye only and with a flat drawing, if the eye is deceived by some artifice which it is not educated to recognize as such.

Take a piece of pasteboard, and with a pin make a hole in it. Bring the pinhole quite close to the eye, and through it look at the accompanying figure. The figure should be in full light and at a distance from the pinhole not over one inch. Under ordinary circumstances, every line would be blurred with the figure so uncomfortably near the eye;



but the pinhole acts as a diaphragm, which decreases several of the defects of a short-focus lens, and the figure will remain distinct—not only distinct, but also changed in appearance. The central white disc will seem to bulge out of the black field as if it were a convex hemisphere. The perception of relief in that case is immediate, and as strong as it could be obtained with the stereoscope.

The illusion is partly the result of the abnormal curvature of the focal surface, the crystalline lens of the eye acting as a very short-focus lens in such a case. The lines drawn on the white disc and on the black field help to deceive the eye. Their crowding together near the edges of the disc causes them to resemble great circles drawn upon a sphere. Moreover, the eye is not free from distortion. If a few parallel lines running close together are looked at through a pinhole at a very small distance, they appear as if they were bent inward on the margin of the image. On the white disc the lines have been curved the way distortion would bend straight lines if they were brought close to the eye. On the black field white lines have been drawn so as to appear nearly straight in spite of the barrel-shaped distortion, which is the result of the position of the diaphragm before the eye when the crystalline lens assumes its greater convexity. The fact that the lines on the disc seem to be strongly distorted, while those on the field do not, probably causes the eye to underestimate the distance of the disc and to overestimate that of the field.

At any rate, the illusion is much less striking if the lines be omitted.

And if it be made with a black disc on a white field, every other feature of the experiment remaining unchanged, it again becomes evident that the effect of relief is not so easily perceived. Irradiation, which causes a luminous object to appear larger and nearer than a dark one, has a share in the production of the illusion.



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