Scientific American

MASKS OF CLASSIC AND MODERN TIMES,-II. BY RANDOLPH I. CEARE.

(Concluded from page 248.)

The use of masks in religious ceremonies was not confined to Greece and Rome, but was and still is widely spread in all countries where the form of religion is polytheistic. Beast masks and human masks, monsters and complicated head-dresses, all find a use in religious performances. They occur in China, Tibet, India, Ceylon, Siam, and among the old Mexicans and Peruvians, as also among the Indians, Eskimos, Melanesians, and African negroes. The Aleutians put masks along with the bodies in the graves, with such comically different features that one is inclined to take them for dancing masks, which at one time served a profane end, and now are connected with serious conceptions of life and return after death.

In Melanesia carved wooden masks often trimmed around the lips with red beans, fitted with wigs of real hair, and dressed in feather clothing, are carried at dances. Such carvings are executed with firm, strong in Japan. Describing these processions, one writer states: "Generally, the procession was led by a winged demon called a Tengu, whose chief characteristic is a very long nose, about which the broadest witticisms are in order among the people. As he passes, he performs clownish tricks, and his office is to put in good humor the bystanders, or else the audience, if the procession is adapted to a theater."

Samba is the name given to the dancer who ushers in Japanese dramatic entertainments. His mask has puffs on the forehead, and often on the cheeks also. In the forehead may be carved deep concentric lines, to simulate the wrinkles of laughter, or as a reminder of the tattoo marks of the Polynesians and New Zealanders. His office, like that of the Tengu, is also to create a good impression on the audience, and make them favorable to the actors.

There is almost no end to the wearing of masks in Japan. The Karas-Tengu, or Crow Demon, has a beak like a bird. The fox mask is a great favorite; so are demons with horns, and a third eye in the middle of stock. Others assume monstrous shapes with visors or masks.

In Central America and Mexico masks inlaid with obsidian and turquoise occur, as well as wooden masks inlaid with similar materials as well as red and white

The masked figure of a god described in the Zuni creation myth of the Indians of New Mexico, is an excellent illustration of the belief that as soon as the priest dons this sacred costume, he actually is transformed into a living representation of the god him-

Among the North American Indians the origin of the use of masks lay, as I am personally informed by the chief and political representative of the Delaware Indians in Washington, in the desire to conceal the emotions. Thus should two warriors meet in combat, the mask conceals any expression, whether of sympathy, fear, or other emotion. For instance, the knowledge that fear was depicted on one's face, and that his antagonist knew it, would very possibly



Alaskan Indian Mask.



Feudal Japanese Masks for Terrifying an Enemy.



Ladak Mask-Tibet.



Ladak Mask from Tibet.



This Costume Conceals an Indian Priest Who on Donning It Becomes a God Described in the Zuni Creation.

MASKS OF CLASSIC AND MODERN TIMES.

relief are colored black. the general level red, and depressed parts white. In New Ireland occur masks made by sawing off the face of a skull, as also in Peru, and with these are connected the rudely-painted skulls of New Britain. Formerly in southeastern New Guinea and in the Torres Islands, flexible tortoise-shell was the favorite material for masks, with wild arabesques and appendages like trunks and combs. Now they use masks of tin in New Guinea, where formerly a rigorous style of mask used to prevail, corresponding with that of the carved woodwork generally.

In Japan masks serve a serious and higher purpose than in many other countries. They were used freely as types of mythological characters in the religioushistorical procession called "Nô." The dances on that occasion were always performed by the upper classes, and they may still be revived on occasion, although they are entirely distinct from theatrical entertainments proper, which are of comparatively recent date muzzle of a goat. Then there are masks worn at weddings and on other special occasions.

In the Papuan Archipelago large masks are used in religious ceremonies, and small ones on festive occasions. In the latter the mouth is usually very much distorted

In the New Hebrides masks are used in dances which the women are not allowed to see. They are built upon a foundation of cocoanut shell, colored with red, black, and white. The mouth and nose are large, and a boar-tusk perforates the flesh on each side of the mouth, the points being turned up to the forehead. These masks are called "Na Bee."

The Peruvians seem to have used masks from much the same motives as prompted their use in Mexico and in the northern coast of America. In their festive rites and processions some are clothed in lions' skins, their heads inclosed in those of the beasts, because they believe that the lion was the founder of their



Tiger-God Mask of the Siamese, Which Is Worn During Theatrical Performances.

insure the defeat of the one whose feelings were betrayed to the other. So in religious ceremonies, the orator wears a mask, that he may speak his inspired words without interference or embarrassment, either of which might arise, were his personality not thus veiled. He must not be overawed by anything-a condition which might ensue if he were recognized by friends, relatives, or enemies, who might scoff at him. When masked, the orator's duty is merely to listen to the inspirations which come without effort through the medium of the spirit. And since this inspiration might seize any of the tribe at such times, all come masked.

The Indians of the coast and islands of northwestern America and of British Columbia indulge in a rich assortment of artistically carved masks, which are fastened in front of the face or are worn on the head. Some of them have human faces, with hair. head, and eyebrows; others represent the heads of eagles or sea-birds, wolves, stags, and dolphins. They are usually exaggerated in size, and are often painted

Scientific American

or covered with leaves of tinsel. Even great pieces of carved work are often worn on the head, such as the forepart of a canoe. The northwest American masks, carved from soft wood, often show great sharpness of carving and certainty of touch, and are nicely polished, showing clearly the tendency of the race to accurate imitation of nature. Animal masks and figures made of plaited bast, strong reminders of Melanesian types, are found frequently in the Northwest and in South America. The great explorer Cook records the fact that when at Nootka he saw the presiding official in a leathern cloak trimmed in straight lines with deer's feet, each hanging by a thong sewn all over with quills, with a mask over his face, and brandishing a rattle.

Among the Haida and Tlinkit tribes the style of ornamentation is artistic, though lately their masks have deteriorated in this respect. The late James G. Swan in his monograph of the Indians of Cape Flattery, published by the Smithsonian Institution in 1869, gave an interesting account of their religious ceremonies, revealing the use and character of the masks employed in their dances, which were mostly carved by the Indians on Vancouver Island, and sold to the Makahs, who painted them to suit themselves. These Indians have three mythical performances, called Dukwalli, T'siark, and the Do-h'tlub. The idea of

represent the features of the Innuit of that region. Masks of special kinds are also used by the Innuits of Prince William Sound, Kadiak Island, Kuskokwim River, Norton Sound, the Yukon Delta, and Bering Strait. A few used in the last-mentioned region are here shown. They were collected by E. W. Nelson, and published by the Bureau of Ethnology in connec-

tion with his paper entitled "The Eskimo about Bering Strait."

A New British 5-Inch Field Gun.

During the recent British military maneuvers. experiments have been carried out with a new type of mobile field gun. The caliber of this new weapon is 5 inches, and it is intended to supersede the 4.7-inch arm at present extensively employed in the British army. This new gun, which has been evolved by the military ordnance department, possesses several distinctive features, which render it a formidable field weapon, though it is more essentially a gun of "position" rather than what is generally understood as a "field" gun. It is sighted up to 81/2 miles, which is a greater range than has hitherto been the practice in military operations, and it discharges a 60-pound shell as compared with the 45-pound shell fired by the 4.7inch weapon. Furthermore, it has a greater rapidity of fire, and is so constructed as to be extremely mobile,

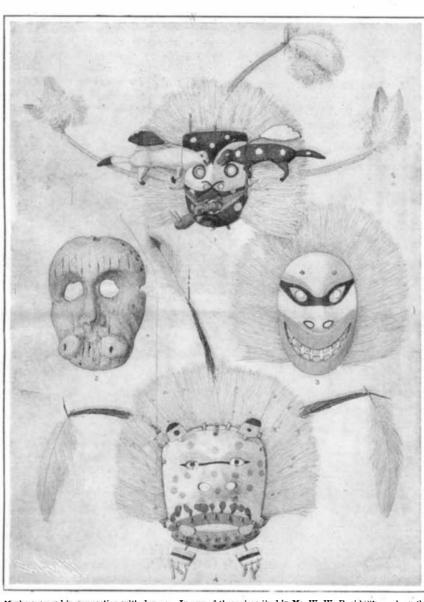
over any other controller now on the market, one adjustment a year being sufficient.

It is claimed that the apparatus would require no attention except winding once a fortnight, and that once set it would not have to be reset for a year. The gas can be turned on and off in the ordinary way, quite independently of the gas controller. This is important, as it might be necessary to turn off the gas for the renewing of the incandescent mantles.

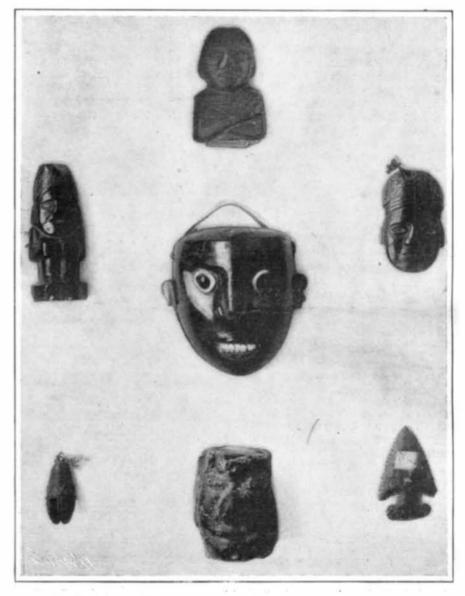
These controllers are now on trial at Bath, and the engineer of the gas company there informs the municipal gas department in Birmingham that so far as their experience goes it gives satisfactory results. In the city of Birmingham proper there are 13,860 street lights, and in the district outside which is supplied by the municipal gas department of Birmingham there are 7,108 street lights, their caretaking costing \$102,-488 per annum. To equip these street lights with this gas controller would involve an expenditure of \$153,-061. The cost of operating, it is claimed, would be just one-half. The price of a controller is now \$7.29.

Modern Threshing.

Thirty years ago threshing time was one of the most strenuous occasions that came to the farmer's annual experience and was something that was dreaded as much by the women of the house as by the



Masks are used in connection with dances. In one of these described in Mr. W. W. Rockhill's work on the Ethnology of Tibet, there were about thirty dancers, half of them men and half women. The second part of the dance was performed by four or five men, with winged rainbow-colored caps, who jumped and twisted about to the clashing of cymbals and the beating of drums



Obsidian Masks and Masked Figures Used in Mexico, Before the Conquest, as Fetishes for the Purpose of Bestowing Power on the Wearer.

MASKS OF CLASSIC AND MODERN TIMES.

the first is to propitiate the "Thunder-bird," who with the Makahs apparently takes precedence over all other mythological beings. The performance is given at the expense of some wealthy member of the tribe. The masks are made of alder, maple, poplar, etc. Many of them have the eyes, lower jaw, etc., movable by means of a cord. They present a frightful appearance, and resemble owls, wolves, bears, etc. The T'siark is a medical or curative ceremony, while the Do-h'tlub is of the same general character as the Dukwalli. These ceremonial masks are called "hu-kau-itl-ik," and the details of the ceremonies are fully described in Dr. Dall's paper on Masks and Labrets.

Masks are used by the Eskimos in their ceremonies. particularly in pantomimes, and are essentially similar to those worn by the Tlinkit, Haida, and Makah tribes of Indians. Among the ludicrous masks there are some which show either human faces or whole human figures, either concealed by flaps or carved in depression on the surface of an animal mask. Some rudely represent the head of a saw-billed duck. In others the head of a fox, wolf, or seal is represented. The Point Barrow masks are distinguished by an artistic finish, and also by the very faithful manner in which they

and easy to operate in the field. The weapon has been subjected to severe tests under conditions as near as possible to those experienced in actual warfare, and owing to its complete success and formidable nature, it has been decided to arm the service with it.

Street Lighting by Clockwork.

Consul Albert Halstead, of Birmingham, reports that an automatic gas controller has been patented and is now on sale in England which may materially lessen the cost of public lighting in the municipalities of the United States if in practical operation it fulfills the claims of its owners.

The controller is said to be adaptable to any type of incandescent burner, to fit any lamp, and to be instantaneous in its lighting and extinguishing. The mechanism consists of a clock which can be so set as to light the gas each night and extinguish it each morning, so as to make an automatic variation of the time of lighting and extinguishing according to the calendar. In short, by means of a chart, the street lights are turned on and off, lighted and extinguished, at a different moment each day throughout the year, according to the season. This is an advantage, it is claimed.

farmer himself, as it required two or three days to thresh the average; crop, with fifteen and twenty men and as many teams to be fed and housed. The stacks of fried chicken and apple pie that disappeared during those troublous days was something wonderful to behold. This is now all changed. The threshing crew come down the road with their whole outfit en train, pull in alongside of the stacks and in ten minutes are at work, and no one is surprised if they are threshing ten bushels a minute. The sheaves being fed automatically the threshed grain runs directly into the farmer's wagons, the straw being stacked automatically, taking away most of the laborious and dirty part of the work of the old times. For the average farmer one day cleans up the whole job, and the thresher moves on to the next setting.—Implement Age.

The manufacture of tantalum, one of the hardest metals known, into sheets and bars is now, it is said, being practised in Germany by the squirting process. the material in its original powdered form being mixed with water and gum tragacanth, and then successfully forced into rods and shapes as desired.