

Things You will be Interested to Read About

Why Your CHIN Is More Important Than Your JAW

Science Shows the Difference Between the BRUTE POWER of the Jaw and the BALANCE of the Chin

THE difference between a monkey and a man: At last it seems that it has been discovered—the cardinal, deciding thing, which, it would appear the anthropologists have overlooked. But it is new and the way in which D. M. Shaw puts it forward gives it the dignity of serious attention. And the difference is—THE CHIN. If you're a square and massive if it is dumpy and round, if it be aggressively protruding or fearfully retreating—no matter what the pattern—rejoice that you have it. If you didn't you would probably be a monkey or so closely related that you might qualify for a job with the freak show as one of the "What-Is-It" family.

The Transforming Chin.

The chin is a balancer, without which one would be likely to run wild in action as well as in talk; this is a deplorable fact that there are some persons who, despite the rectifying influence, chatter the most imbecile things for hours at a time. They do this despite their chins it seems!

"The man who wrote a book on 'The Speech of Monkeys' might possibly have had hope of more success in interpreting the 'language' of these animals if only he could have subdued and steadied their gibberings and chattering by providing them with weighty chins," says Mr. Shaw, discussing the chin as a dynamical factor in a recent communication to Nature. It is not the jaw that makes the character, for you will find in the specimen of Africa, marvellously strong jaws and teeth as firm as rocks. It is the chin that is the transforming factor, not only in its psychological relation, but it gives man a surprising

dental outfit. "This much at least can be stated here as being susceptible of proof," declares the writer, "that compared with the prognathous savage or the ape the dental apparatus of the modern civilized man is the 'finer machine' in so far as it is the better adapted for those shearing stresses by which tough foodstuffs are dominated with economy of effort."

Scientific men have debated long to account for the endowment of man with a chin, and these are the three principal explanations that have been advanced:

First—That the chin has been evolved by sex selection for its aesthetic value. One realizes the value of this in studying the faces in romantic graphic art—principally in the pictures of modern illustrators who have a story to tell of the Girl and the Man. Harrison Fisher, Charles Dana Gibson, James Montgomery Flagg, Willard Newberry Henry Hutt, Philip Boileau and others who have shaped women with adorable chins and men with the hundred per cent masculine features, will unhesitatingly subscribe to cause No. 1.

Second—That it was necessary for the development of the geniofacial muscle of speech. A cause to which Aid. Sam McBride might subscribe.

Third—That with man's erect posture, the chin is a dynamical factor in the throat, and protecting them during combat, etc. The throat specialist will be able to say something on this point; likewise the prizefighter, whose chin, while it may protect the delicate structures of the throat, is one of his most vulnerable points of assault. How many times have the newspapers told that this or that distinguished ring performer has



The Normal Jaw Well Balanced by the Chin.

The Jaw Unbalanced by the Chin.

The Big Jaw and Small Chin of the Chimpanzee.

been "but to sleep by a right cross to the point of the jaw," which is the chin of course!

Blow on the Chin.

Mr. Shaw points to the fact that these explanations have met with very little acceptance, and advances his theory, which, while being technical in expression, yet is so set forth that even we laymen may grasp it with fair expectation. It is a new angle by a man who has given the subject much thought. He has studied the chin as a mechanical expert studies a machine with a view of determining its full efficiency. So when you are eating or speaking you may realize what a very essential point is the weight at the point of the jawbone.

Maxillary Velocities.

"The combined movements are so directed that at some parts of the jaw the resultant velocity is less than would exist if either component were to act alone; and at about a point situated between the jaw angle and the condyle, the resultant velocity is so small that some observers mistakenly believed it to be nil. At the chin, on the other hand, the directions of the component movements are such that the resultant velocity reaches nearly its maximum acceleration.

"My suggestion is not quite that the chin is simply man's masticating hammer; something rather less crude than a purely percussive function is conditioned by the momentum of the chin. No doubt the momentum of the chin may appear to be a very small contribution to the considerable muscular force often used in chewing. Yet on the teeth themselves many morphological details that have been preserved as distinct specific features are so small that we do not yet know what the particular utilities are that determined their shape and survival.

Further, there is another peculiarity in the mandible movement that may have some significance in this connection. During a (supposed) uniform movement of rotation about the condyle as horizontal axis, the accompanying translation movement is not uniform, but relatively rapid—slow or small in the beginning, quick in the middle, and slower again toward the end of the condyle path.

The fringes form a pendulum-like swing. This is favorable to the normal rhythmic movement of the jaw by giving in some degree a pendulum-like character to its swing. And it so happens that the position of maximum velocity (and momentum) coincides with the position of greatest resistance and food-strain in chewing—that is, when the cutting-edges of the external blades of the lower cheek teeth are just about to pass their upper opponents in the inward-and-upward shearing thrust.

mechanism of the process was obscure prior to Coblenz's observations. These seem to prove that the moisture is exuded from the stems by capillary attraction, and the phenomenon is therefore similar in origin to the ground frost formed on the surface of wet soils, except that in the latter case a particle of gravel usually forms the nucleus to start the congelation.

When the moisture within the stem is frozen fringes cannot form, nor do they occur when the ground is frozen to the depth of an inch or more. The size of the ice fringes and the height to which they extend above the ground depend upon the rate of evaporation from the stem and upon the amount of moisture in the ground.

Fringes form most readily and abundantly on stems having a great number of sap-tubes; differences in the anatomy of their stems explain why some species form fringes while others do not.

How PLANTS Put On ICE DRESS

ICE fringes on the stems of plants occur on comparatively few species, and appear not to have attracted much attention. It has, however, been described, with attempts at explanation, by Sir John Herschel, John Le Conte and a few others. The Journal of the Franklin Institute contains an interesting discussion of the phenomenon published by W. W. Coblenz, who reports the results of his own observations on the ice fringes of Britanny (*Onulla maritima*).

The fringes form in freezing weather, especially in the autumn, in the form of delicate loops, ribbons, or curled plates of thin ice, which are evidently not a form of hoarfrost, as the amount of ice is much in excess of that which could be condensed out of the atmosphere.

The moisture is undoubtedly supplied by the plant itself, but the

When AIR Is BAD---Just How It Does Actual HARM to HUMAN HEALTH

IF the air in a room is bad the vast part of the injury which it is likely to work upon the system may be easily obviated by simply keeping it in motion.

MICROBES That Can Live on RUBBER

COMMERCIAL rubber which is kept in perfectly dry air is not capable of furnishing nutriment to any form of microbe, according to a note in the Bulletin of the Pasteur Institute. Paris, out in the presence of sufficient moisture it may be attacked by certain bacteria or moulds which feed on albuminoids, resins and sugars.

Some microbes form red, yellow, brown or black spots on rubber without sensibly altering its properties. But there are two species of actinomyces (act. elastica and act. fusca) which are able to assimilate the by decomposition of rubber, and which may therefore modify its properties as to destroy its value.

halting such air is necessarily deleterious to the health. It has shown that in the majority of instances there is no great deficiency of oxygen in it.

Dr. Charles Fox Gardiner indirectly demonstrates these facts in an air bath, which he has found very beneficial, especially in the case of consumptives.

He does not take the patient out of doors, or even open the windows of the apartment. Instead the air of the sick room is agitated by an electric fan, but made to pass thru a screen, so that there is no perceptible draught.

A framework is placed across the bed and covered with cloth, only the head of the patient being outside. Within this framework are several incandescent lamps to furnish light and warmth, just as does the sun outside. The body is entirely naked, so that no stagnant air is held to it by the clothing.

Evidently the air is not purified by the process. No medicinal elements of any description are added. It is simply set in motion, delivered from stagnation, and yet the doctor affirms that such baths are at times even more efficacious than those given in the open.

Where Strange DEVIL DANCES Are Shown by Skirted MEN



Ceylonese "Devil Dancers," Wearing the Startling Head Masks.

WHEN THE Devil dances we all have to pay, runs an old saying. This might apply to Ceylon, where Devil dancing is quite in the fashion and where the terpsichorean representatives of His Satanic Majesty are not at all averse to remuneration from the ungodly and the godly alike.

The Devil dancer as known in Europe and America is not at all the fearsome thing as these Cingalese men; that of the Occident a woman, even a devotee soaked in the superstitions of the east, could succumb to the lure of creatures—if such really existed—like the frights here shown. But our Devil, which tangoes and fox-trots, is a creature so sinuously fascinating, so seductively pink and white and bright of eye, so charmingly cabareted that the lure makes itself at once felt.

An observant social reformer once said that the only safe way to dance at any of the public teas would be to do so blindfolded—then, we would not behold the Devil. Similarly this advice would apply just as effectively in the case of the skirted and masked dancers of the east but for the fact that they never have outside partners.

And so it seems that if India is really swinging into the van of the world's progress, and the old is giving place to the new, its Devil will surely have to change his face.

Wonderful EYE DECEIVERS and LIGHT FREAKS in the SKY Reported from ANTARCTIC CIRCLE by Sir Ernest SHACKLETON

SIR ERNEST SHACKLETON, who is leading another expedition in an endeavor to cross the South Polar continent from sea to sea, has had put on record the most varied and amazing collection of "optical and light freaks" ever obtained by exploration. Included in his staff is George E. Marston, the artist, who served under him in the famous expedition of 1907-1909, who caught with pencil and brush some of these wonders of the sky—mooch suns, colored rings around the great luminary, accompanied by an upright beam of light; mirages, in which images of icebergs and land below the horizon were seen projected in the air above; the circular "fogbow," similar to a rainbow; weird earth-shadows cast upon the eternal white of the landscape; mock moons, rings accompanied by an upright beam thru' the real moon; sunset over sea ice, a strange, flame-like effect, probably due to the sunlight falling on ice particles in the air.

And yet one does not always have

to take the long and arduous journey to the Antarctic to witness these wonderful manifestations of the sunlight and moonlight. In November of 1912 several observers in the United States carefully noticed an impressive show of halos and sun-dogs. That it rivalled or even surpassed anything previously seen by human eyes and recorded we have on the high authority of the Scientific American, which declares, after studying the reports and the diagrams from various correspondents:

"It seems probable that if all the observations of the halos of Nov. 1 and 2 should be collected it would be found that some observers were treated to sights rivaling the historic 'Petersburg phenomenon' of 1780, which has heretofore ranked as the most wonderful halo ever seen, except, perhaps, in the polar regions where complicated halos are fairly common."

Artist Marston, who has preserved the "fogbow" for the art gallery and the printed page, tells that it is similar in color to the iridescent arch that follows rain, and that the complete circle was visible within a short distance of the spectator. Paraselene—the mock moon—is visible during the

winter, when the air is filled with minute ice crystals. The rings are generally colored, and the upright beam thru the moon causes an uncanny feeling when one beholds the display for the first time. The halo-like effect of the sunset seen over sea ice is probably due to the same cause that produces the mock moon, with the ice particles affected by the upward air current.

Under the heading of "Meteorological Optics" in Shackleton's "The Heart of the Antarctic" it is written: "Rings and crosses round the sun and moon. These phenomena, proceeding from the refraction of the light of the sun and moon, are numerous and varied. Parhelia and paraselene were of common occurrence."

Dr. B. C. L. Miller of Richmond, Va., while having been denied the profuse display witnessed by Shackleton and his recording artist, still, with several other scientific men, saw a single display which, for intricacy of design and clearness, must excel any of the Antarctic phenomena. In writing of it he says:

"On the second day of November, 1913, there was manifested in the sky a very complete set of halos and sun-dogs. They were seen here in Rich-

mond and probably in a considerable area, for several inquiries were received by the railway companies from their station agents out on their lines as to the cause of the phenomena.

"I first noticed the phenomena about noon, and they remained visible several hours. The most marked object was a large circle about 30 deg above and concentric with the horizon. It was white and about the width of the full moon. On this circle there were four bright chromatic modes."

"I suppose these phenomena are due to the refraction of light from minute particles of water or ice in the highest atmosphere."

"The day was beautiful, an ideal autumn day; cool and clear with slight haze in the air and a bit of herringbone effect in the sky at times. There were no clouds except very low down, and the geometrical designs traced in the sky were very striking. With some crude instruments Dr. Hopkins and I measured the angles as best we could, and the drawing is fairly accurate."

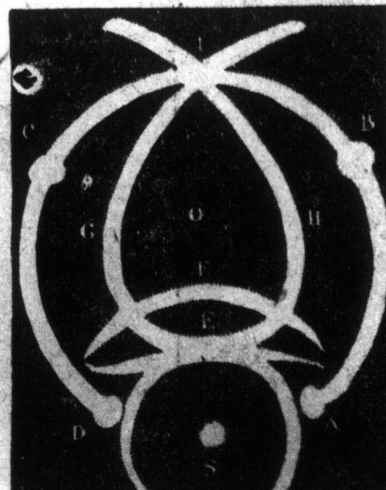
Dr. Miller may congratulate himself on having seen a most striking and rare phenomenon, declares The

Scientific American. On Nov. 1 and 2, 1913, a large area of high barometric pressure—an anticyclone—was drifting sluggishly across the eastern half of the United States. Over extensive regions of the country the sky was lightly veiled with cirro-stratus clouds.

Evidently the air at this cloud level was in a very unusual state of tranquillity.

Complicated and beautiful halos were seen at many places in the states of the Mississippi valley on the 1st, and in the Atlantic states from Maryland southward on the 2nd. The phenomena appear to have reached a particularly high state of development in southern Virginia, the those seen the previous day at points in Missouri and Arkansas were no less remarkable.

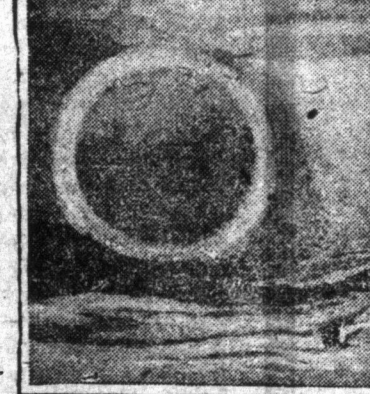
People who have traveled in North Ontario, far above the Transcontinental line, tell some remarkable stories of sun-dogs and other light freaks seen during the day in late autumn.



Record Beating Set of "Sun Dogs" Seen by Dr. Miller.



Waving, Flame-like Effect of the Arctic Sun Seen Over a Sea of Ice.



Fog Bow Iridescent Circle Seen Very Near Beholder.



Paraselene. The Rings Are Generally Colored and Accompanied by an Upright Beam Through the Moon.