

MAP OF THE HEAVENS

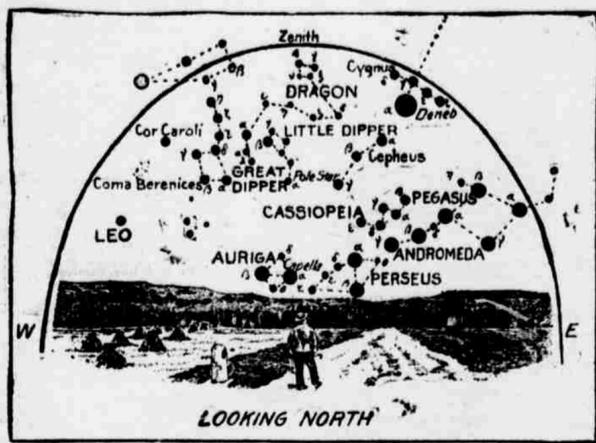
for August.

August being one of the months during which we may expect on a large scale dazzling downpours of shooting stars, I think it particularly opportune for me to devote to these curious phenomena the first part of my monthly talk.

What we are accustomed to call shooting stars are really not stars at all, but fragments of some destroyed planets within our Solar system, abandoning their circulatory motions around the Sun, and millions of which are supposed to exist in all sorts of sizes from a pebble to a mass of many tons' weight. As their orbits cross that of the Earth, their small bulk renders them ultra-sensitive to our power of attraction—that same power to which we owe the Moon's regular and obedient moving around our sphere. When these fragments of broken-up planets thus enter the boundaries of the Earth's gravity power, they "shoot" downward with such rapidity as to ignite, as they fly through our atmosphere at a rate of not less than 18 to 25 miles per second, and there, these opaque, until

has been found powerful enough to separate the stars it is composed of. Underneath, close grouped, see the stars of "Coma Berenice" (Queen Berenice's Hair). Of the Zodiacal Constellation "Leo" (The Lion), behold Regulus (or the Heart of the Lion) a remarkably fine, first magnitude star. Returning to the Zenith point, we notice to the East, four of the stars of "Cygnus" (the Swan), Arid in its solitary splendor, and in a row, four very fine luminaries. The rest of the long arm of the cross will be visible in our southward aspect. You remember that it ends with Albireo, doubtless the finest double star of the heavens, its larger component of a fine orange color, the smaller one of an intense blue.

Following downward and crosswise, in direct line with Arid, we find Alderamin, Alpheratz and Erral of "Cassiopeia". Underneath, the W, clearly formed by five stars, of "Castropeia" (the Seated Lady), and, to its right the three principal stars of "Pegasus" (the Winged Horse), Markab, Scheat and Algenib forming such a fine

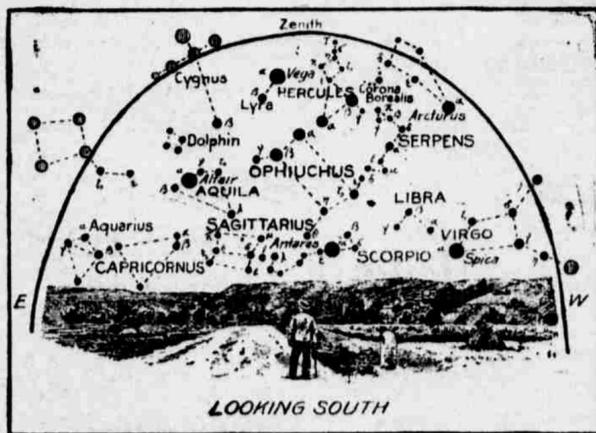


then invisible fragments of stars become suddenly luminous, leaving a streak of light behind their vertiginous, head-long course. On the way, most of this matter is reduced to an impalpable powder—partly iron and nickel—which, under microscope appears absolutely different from any earthly mineral combination. There is plenty of that "celestial powder"—a rather bold association of words—all over the surface of our globe; it is discovered in the analysis of water, of snow, even in matter brought up from the bottom of the ocean. Thus do the heavenly bodies give us a "touching" token of their existence.

"Shooting Stars" begin to be visible at about 75 miles above sea level, that is, as soon as they reach our atmosphere, which is believed by the majority of expert scientists not to extend any farther around us. The nights of August 10 and November 14, of every year are noted for a plentiful downpour of those aerolites. Every 33 years there is a recrudescence of such manifestations; ever since 1902

square with Alpheratz of "Andromeda" (the Chained Lady), Mirach and Almach of the latter constellation lead us to the triangle of "Perseus" (the Champion) close to the horizon, with Mirak and Algol shining superbly; west of them Capella (the She-Goat), the first magnitude star of "Auriga" (the Waggoner), and its companion Menkalinan send us their brilliant message.

Let us turn about now and begin looking Southward. The minor stars of "Hercules" (the Kneeler), are at our Zenith, its two chief luminaries, Ras Algethi and Kornorfor lower down. Vega of "Lyra" (the Lyre) reigns supreme in that region of the firmament; Sheliak, another star of the same constellation, leads us downward to Albireo of "Cygnus" (the Swan) of which I spoke above. Continuing along the Eastern limit, we notice "Delphinus" (the Dolphin), known by its four leading stars forming an irregular square. Underneath we are greatly attracted by the



these exceptionally fine star showers came to time with promptitude, the years 1866 and 1899 being no exception.

Looking Northward. To our Zenith, the second magnitude stars Restaban and Etanin of "Draco" (the Dragon), indicate the place occupied by the head of the celestial monster; while to their left, Nekkar of "Bootes" (The Herdsman) is the largest visible star of this constellation. The tail of the Dragon stretches down, between the Great Dipper and the Little Dipper, its principal star, Thuban, shining between Alloth of "Ursa Major" and Kochab of "Ursa Minor". Along the western limit, "Cor Caroli" (The Heart of Charles) displays a fine star that bears its name. Sometimes this constellation is called "Canes Venatici" (The Hunting Dogs) and then the appellation of Cor Caroli is given its main luminary of the third magnitude. One of these two dogs' name is Asterion, and at the place where his collar is supposed to be found a remarkable nebula, the center of which is surrounded with a sort of broken ring; no telescope

dazzling light of Altair, the first magnitude beauty of "Aquila" (the Eagle), Alshain and Tarazed shining on either side. Close to the Eastern horizon, we meet the Zodiacal Constellation "Aquarius" (the Water Bearer), its three leading stars (of the third magnitude) in a fairly regular triangle. Its Easternmost star, Sadalsund, is close to "Capricornus" (The Sea-Goat), another Zodiacal Constellation, and a curiously shaped triangle, with Segunda Giedi and Deneb Giedi (third magnitude) close together at the Western angle. These almost reach up to a third Zodiacal Constellation, "Sagittarius" (the Archer), only the upper portion of which is visible this month. Still in line, close to the horizon, is stretched a fourth Zodiacal Constellation, "Scorpio" (the Scorpion) including the deep red first magnitude star Antares (the Heart of the Scorpion). Several stars in the tail of Scorpio are so far south as never to rise in our latitude.

Working our way back to our Zenith, we meet the beautiful square of "Ophiuchus" (the Serpent Bearer), with its fine Cabalrai and Ras Al-

hogue in direct line with Ras Algethi and Kornorfor of "Hercules" (the Kneeler). "Corona Borealis" (the Northern Crown), a necklace with Margarita as its best jewel, leads up to these stars of "Bootes" (the Waggoner), which we did not see in our Northern inspection. Looking gradually downward, we pass "Serpens" (the Serpent), with Unukalhai, a third magnitude star, and reach the three stars of "Libra" (the Balance), a Zodiacal Constellation. Finally "Virgo" (the Virgin) completes the largest number of Zodiacal Constellations (seven) we ever saw together in one and the same month. The square of Virgo shines splendidly with Spica (the Ear of Wheat), first magnitude, in the lead.

The Planets Visible This Month. No chance of seeing "Mercury," too close to the Sun. "Venus" is the Morning Star, toward the East. "Mars" also illumines the Orient before sunrise. "Jupiter" will shine in "Scorpio" during the first half of the night; "Saturn" will be visible—pale but steady—in "Sagittarius" for two-thirds of the dark hours.

C. de SAINT-GERMAIN.

Movements of the Eye

A very curious device has been invented, by which it is possible to determine how many times the eye moves in reading, and how fast the movements are made. The object of the instrument is to show in what cases reading is hurtful to the eyes, and thus to prevent shortsightedness and fatigue. In a test of the instrument recently made the results were curious. A man's eye was first made insensible to pain by an application of holococaine, and then a very light shell, with a hole in the center, was placed on the eyeball and held to it by suction. The shell was connected with light aluminum levers in such a way that the eye movements were traced on a moving sheet of smoked paper. Electrical devices caused the pointer to record not only the movements, but the speed of each and the exact time it took. The tracings showed that the eye does not move over a printed line continuously, but by quick jerks of varying length. The eye returns in an unbroken sweep until near the end, when it halts occasionally, as if to get its bearings. The average number of jerk movements in reading a newspaper line is about three. A line slightly less than an inch in length was read without any movement.

Fishing in Scotland.

Fishing statistics just prepared by the government state that last year there were 85,000 persons engaged in the fishing industry in Scotland. Of that number, 35,800 were fishermen, 19,000 were gutters and packers of herring, and the remainder were cutters, cooperers, carters, clerks, hawkers, boat carpenters, net workers, barrel makers, and men employed in the shipping of herring and curing material. The number of boats employed was 11,275, and of these, 10,973, valued at £831,670, were sailing boats; 232, valued at £938,740, were steamers, and 70, valued at £145,490, were liners or drifters. The total value of the fishing fleet was £1,915,900, and the value of their gear, £795,977. More than 42,960 miles of lines were used, and 57 square miles of nets. Over 268,000 tons of fish, valued at £2,400,000, were landed, mostly herring. The catch was about the same as in the previous year, but the prices were, if anything, better.

Men Barred from Smoking.

According to a Berlin correspondent, the authorities in Ems have issued a notice in regard to the wearing of trains by ladies, in which the danger is pointed out of causing dust to fly about in a town where there are so many invalids. The printed notice concludes thus: "Ladies will, perhaps, find comfort in the fact that men are also requested to refrain from smoking during the hours when the invalids are taking their walks. Should this wish of the authorities not be complied with, then a police order will be issued, which will be strictly enforced."

Titles to Accompany the Egyptians.

Sir George White of England can now write after his name—V. C., G. C. B., G. C. S. I., G. C. I. E., and G. C. V. O. and G. C. M. G.—Twenty-one letters. This beats Lord Roberts, who has seventeen—namely, V. C., K. G., K. P., G. C. B., G. C. S. I., G. C. I. E. Lord Wolseley is entitled to wear four stars—namely, those of the K. P., G. C. B., G. C. M. G. and First Class of the Osmanieh.

Bottles in the Trees.

Numbers of experiments have been made to test the speed and destination of corked bottles thrown into the sea in various parts of the world. The most remarkable example was that in which a bottle traveled 6,000 miles in about two years and a half—roughly, at the rate of six and one-half miles a day. It traveled from latitude 63 degrees south and longitude 60 degrees west to western Australia.

We should be more enthusiastic about the success of our friends if we didn't feel that we deserved it more than they.

SOTHERN'S LITTLE JOKE.

As a Ventriloquist He Plays Trick on His Partners.

One of the peculiarities of Sothern's elaborated jokes was the way in which he worked up to them. He pretended to have discovered accidentally that he possessed the gift of the born ventriloquist, and arranged an experiment on the occasion of a supper party given in his honor at a pleasant house in a London suburb. There was a foolish kind of hanger-on of Sothern's who loved to boast of his intimacy with the famous comedian. He had often said, "I wish you would let me help you in one of your practical jokes, Mr. Sothern." Sothern humored his desire. Every one knows how fond the professional ventriloquist is of talking up the chimney to an imaginary man on the roof. Sothern had arranged for his slavish confederate to mount the roof by a ladder and play the part of the voice on the roof, which he did to perfection, and Sothern's success as a ventriloquist was voted nothing short of marvelous. Supper being over, the party adjourned to another room, at which point Sothern said "Good night" to his friend above when it was arranged that the scene should be concluded. Sothern, had, however, plotted against his man, who found, when he wished to descend, that the ladder was gone. By hook or by crook the deceived confederate found his way to the chimney of the smoking room, where the supper party were settling down for a long evening. Presently a voice was heard calling down the chimney, "Sothern! Sothern! for heaven's sake come and help me! I can't get down and it's raining like mad!" Sothern was taken aback for a moment, but only to be in ecstasies the next at the exclamations of his friends, who considered the voice only another example of Sothern's skill. "You said you could do more, your voice was tired, and here it is stronger than ever!" Sothern, accepting the compliments of his friends, managed in a short conversation with the voice on the roof to let his happy confederate understand that as soon as possible he would go out and help him down. After a time, just when Sothern was about to slip out and release his friend, his host went to the chimney, and, all the more emphasize Sothern's success, as he thought, called out, "Are you still there?" This was the last straw upon the rain-drenched back of the sufferer. "Oh, go to blazes!" came the angry reply, and with it a piece of mortar that rattled in the grate. "You're a beast!"—Exchange.

HOME OF MYRIADS OF BATS.

Great Cavern in East Africa Inhabited by Enormous Mammals.

One of the most remarkable caverns in the world has recently been discovered by a Belgian missionary, M. Chaudois, on the coast of German East Africa, near the harbor of Tanga. The main entrance to the cavern is in the form of a majestic arch, which is more than thirty feet in height. Beneath it gushes from the earth a stream of water. The cavern is 120 feet high in some places and as many as 240 feet in others. The principal portion is fashioned like a chamber and it is so spacious that it reminds one of a square in some large city. A labyrinth of halls intersects this chamber and each of these leads to a smaller room. Intense darkness prevails throughout this subterranean region and the man who loses his way in it cannot easily find it again. A worse difficulty than this, however, has to be encountered, for from time immemorial the cavern has furnished a home for myriads of bats, and the human being who penetrates into their stronghold finds it at times impossible to make the slightest headway and is sometimes even obliged to make a hasty retreat. According to M. Chaudois, the sides of the cavern are literally covered with these bats and some of them are such a monstrous size that it is impossible to defend one's self against them, even with a stout stick. "I saw some," he says, "that measured more than three feet in width and whose heads were as big as chickens. One can imagine that it is very unpleasant to find one's self suddenly surrounded by thousands of such creatures, and that as they swarm around you it is very difficult to prevent them from extinguishing your torch. More than once they obliged me to take flight, for their attack was so vigorous I could not withstand it." Another discomfort lies in the fact that water is perpetually dripping from the roof of the cavern.

Animal Sagacity.

The marmoset is not generally an animal whose intelligence is well developed. The following anecdote, however, will prove that there are individual exceptions. M. Hatcher-Souplet possessed one of these monkeys, which was subject to toothache; for, when it was eating nuts, it manifested its sufferings by expressive pantomime. It would try with its fingers to get out the small pieces of nuts lodged in its teeth, only doing so with great difficulty. It occurred to M. Hatcher-Souplet one day to suggest to the monkey a better means of getting out of the difficulty. He took a toothpick and used it before the animal. Then, after giving the monkey a lot of nuts, he placed in the middle of its cage a short stem of iron, which he had sharpened to a point on a stone. The monkey seized the iron and tried to use it as he had seen his master do with the toothpick. Not finding it to his liking, he proceeded to put a finer point upon it by sharpening it on the stone. He dislodged the pieces of nut, and always afterward used his iron toothpick with most satisfactory results.

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BIG YEAR FOR CROPS.

BRIGHT PROSPECTS FOR HEAVY YIELDS OF CEREALS.

Good Prices for Every Marketable Bushel of Grain Looked For—Tremendous Crops of Wheat, Cotton, Hay, Tobacco and Vegetables.

Splendid crops of all cereals are being gathered and good prices for every bushel that can be marketed are confidently expected by the grain owners of the great west. Everywhere in the west, experts inspected the growing fields of wheat, oats, corn and rye and forecasted the probable yield. Conditions were found favorable to a mammoth yield of all cereals but with the next month depends the fate of all growing crops. Should favorable weather ensue, a supply of foodstuffs sufficient to feed all Europe will be assured and a market can be found, it is estimated, very readily for all that is not consumed in the United States and paying prices are looked for. This year's crop of wheat will be greater than that of 1900, although there has been a reduction of 1,200,000 acres in the acreage of spring wheat. Last year's crop was 522,230,000 bushels, valued after harvesting at \$323,515,177. From present indications, it is estimated that this year's yield will be not less, and probably more, than 650,000,000 bushels which, at last year's farm prices, would be worth \$419,250,000. The critical time for wheat will not be over until August 15. Present conditions are most favorable but excessive moisture or prolonged drought may decrease the yield in far northern territory. The acreage in Texas, Oklahoma and Kansas is not as large as last year but the shortage there will be counterbalanced by increased acreage in Illinois, Missouri, Ohio, Michigan and Indiana. Foreign conditions are expected to make the price of wheat firm. The French crop is reported below the average. Great Britain will be a good customer and it is believed Germany will import 100,000,000 bushels, although her usual imports are about 40,000,000 bushels. The corn crop, while backward thus far and although the acreage devoted to its cultivation is considerably less than was the case last year, it is expected to bring a good figure and pay the growers even better than 1900. Men who have carefully studied the corn situation believe that 40 cents a bushel will be the minimum price. The total yield this year will be, if the weather continues favorable, as great as last year, 2,100,000,000, and its value will reach the tremendous sum of \$840,000,000. Oats will probably show a slight decrease in production and hardly so great a yield as was gathered last year will result. It is possible, however, that the figures for 1900, a yield of 800,000,000 bushels, may be reached, which, at the rates prevailing last year, would be worth \$266,400,000. Barley and rye show a substantial increase over last year's production. In 1900, 58,926,000 bushels of barley, valued at \$24,075,271, were grown while this year 75,000,000 bushels, valued at \$30,600,000, are looked for. Rye is expected to show an increase from last year's figures, 23,995,927 bushels, valued at \$12,341,413 to 26,000,000 bushels, valued at \$13,312,000. From the south come reports of bright prospects for a tremendous crop of cotton. Stimulated by the high prices of last year, the planters have given over to the cultivation of cotton 2,111,000 acres more than in 1900. It is expected that this year the yield will be not less than 10,984,000 pounds, worth \$563,024,000, while last year's crop was 4,606,119,354 pounds, valued at \$34,847,868. Also there are excellent yields of hay, tobacco, potatoes, vegetables and fruits of all kinds. The farmer's profits promise to be large, exceeding those of any year for a decade.

THE SULTAN'S DAY.

Precautions Taken By Him Against Poison and Assassination.

Abdul Hamid's program for the day is a journal of cowardice, says Eugene P. Lyle in Everybody's Magazine. He rises about 5 o'clock, for he limits to the utmost his lapse into the helplessness of sleep. He takes a cold bath—vapor baths and massage might reduce his poor skeleton yet more—and after the bath comes coffee and cigarettes, both made in his presence and kept up all day long. He is a very busy man, but his affairs are mostly spies' reports and translations of foreign press comments. The real business of state may drag for months and years. In solitary splendor he eats gingerly of his dinner. Imposing pages bring on the viands in solemn procession. The plates are under seal, just as they were sent from the kitchen. The kitchen, by the way, is an armored box with iron shutters. The august diner often asks an attendant to taste this or that, or uses the same precaution on the dogs and cats around him. He suffers from stomach troubles, so in a few minutes the repast is finished. Abdul retires late. From behind a screen the grand master of the wardrobe reads to him fearful tales of blood and murder. His sleep is unquiet and nervous. He wakes up frequently and calls aloud for company.

Even Bats Have Their Uses.

Life's monotony are a blessing and not in disguise, for they contribute directly to longevity, health and happiness. The long-lived man is not the adventurer, the explorer, the plunger, the man who has worries; but he who takes the world as he finds it and slips along through life with as little friction as possible, forms easy-going habits, sticks to them and cares not one straw for the opinions of men who say that he is a rat. He is healthy because he has peace of mind and regularity of life; he is happy, because he is healthy and in a good, smooth, comfortable rut, which he prefers to the macadam on the sides of the road. Goldsmith's pastor, who had charge of the deserted village, who ne'er had changed nor wished to change his place, is an excellent example of the man who makes the most possible out of the monotony of life.—St. Louis Globe Democrat.

American Locomotive Trade.

The English have been severely criticizing American locomotives because they consume more fuel and for other reasons cost more to run than machines of English manufacture. Yet the growth of our export trade in locomotives continues to grow. Last year 525 were exported, valued at \$5,592,403, whereas ten years before only 144 were exported. English statisticians record the value of their exported machines and not the number of them. The value is still slightly in advance of the value of American locomotive exports, but the American trade is fast gaining on the English. As soon as a woman falls in love her complexion gets better.