

HE evening heavens are never more brilliant than in the first more brilliant than in the first test for even the smallest telescope, menth of the year. The whole

of the southern and southeastern quarters of the sky are occupied by magnificent constellations, including seven or eight of the brightest stars in the firmament, one of them Sirius, holding a rank apart as the most splendid stellar object within human ken.

Our chart shows the evening sky as it appears to the observer at 9 o'clock p. m. on the 1st of January; at 8 o'clock in the middle of January; and at 7 o'clock at the end of the month. But, as the apparent revolution of the heavens is not rapid, it is not the heavens is not rapid, it is not necessary that the observer should confine himself to precisely these hours. He will find that the chart is substantially correct for any time in the early evening. If, however, he would catch sight of the planet Sat-uer how on the water horizon, he urn low on the western horizon, he must not look for it later than the hours named at the respective dates, and by looking for it half an hour earlier he will see the planet more clearly, because it will then be high-er above the horizon. But Jupiter, er above the horizon. But Supher, high in the eastern quarter of the sky, is visible during nearly the entire night, and so marvelously bright and beautiful that it outshines even the most brilliant of the fixed stars, and forms an irreststible attraction for all eyes. On account of its brightness, Jupiter affords an excellent opportun-ity for the beginner in celestial observation to note a peculiarity which enables one with a little practise to distinguish at a glance between plan-tes and fixed stars. The stars scin-tillate; the planets do not. The light of the former issuing from what is virtually a mathematical point, with-out measurable dimensions, on ac-count of their enormous distance from us, is affected by the invisible ripples of the atmosphere, and accordingly appears, especially when they are near the horizon, to flash and tremble. The light of the planets, on the other hand, being reflected from disks of measurable breadth, and in itself less intense and less concentrated into a narrow beam, is comparatively free from atmospheric disturbance, so that the planets glow more steadily and serenely. With a powerful field glass, or binocular, one can readily see some of the moons of Jupiter. He possesses four principal moons, not to mention the three smaller ones which are so minute that only a very few of the most powerful telescopes in existence are able to give glimpses of them. But

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and it is a delightful thing to watch them throughout an evening, for they move so rapidly that in the course of two or three hours their change of place becomes very evident. They Auriga, marks the may be seen approaching Jupiter on angel of the hexagon. the eastern side, or receding from him on the western; once in a while one of them will be observed to disappear as it goes into eclipse in Jupiter's shadow at considerable apparent distance away from him, and with a good telescope their little round black shadows may often be observed mov-ing slowly across his bright disk.

as they come between him and the sun. It is interesting to reflect that if the observer were on Jupiter, with-in the space covered by one of those black dots, he would witness a total eclipse of the sun. Such eclipses are very common phenomena for the in-habitants of Jupiter (if any such inhabitants there be) on account of the number of Jupiter's moons, and the comparative rapidity of their revolutions about the planet.

It is also interesting to reflect, while looking at Jupiter, that that planet is more than 1,300 times as larage as the earth, on which we dwell. Its imthe earth, on which we dwell. Its im-mense colored "belts" lying parallel with its equator are very interesting and wonderful objects for those who possess telescopes of three or four inches aperture, capable of bearing magnifying powers of from 100 to 200 or more dismeters. A power of 100 or more diameters. A power of 100 is quite sufficient with a good glass to show all the most important pheto show all the most important phe-nomena of Jupiter's variegated disk. The belts are believed to be some-thing in the nature of clouds in the enormously deep, dense atmosphere of the planet. They offer many puz-zling problems which astronomers have not yet solved

formed by the chief stars of the con-stellations, Auriga, Taurus, Orion, Canis Majer, Canis Minor and Gemini, This figure includes nearly the whole southeastern quarter of the sky be-ginning from a point nearly overhead where the snowy white Capella, in Auriga, marks the northern-most Running the eye downward from Capella toward the south and a little westward we see, at the next corner, the first mag-nitude star Aldebaran shining with a peculiar rosy red light. Aldebaran is the brightest member of the little V shaped group of stars called the Hyades, which glitter on the shoulder of the imaginaray bull, Taurus. A little above and to the west of the Hyades, tremulous with flickering beams, shines the famous cluster of the Pleiades, or Seven Stars. Most eyes can detoct with certainty, only six stars in the cluster, but there is a strange glimmering which gives the impression of a multitude, and the telescope shows that this impression is well founded, for there are really hundreds of faint stars sprinkled through the group, and photographs reveal maryclous masses and streams of glowing nebulous matter there. Tennyson's line about the Pleiades

glittering: "Like a swarm of fire-flies tangled in a silver braid,"

Is one of the happlest descriptions ever written of an object in the

observed and admired in all ages, and was connected with the ancient wor-ship in some of the Egyptian temples. Although Sirius is apparently the Although Sirius is apparently the brighest star in the whole sky, it is in reality a much less brilliant sun than Rigel, being very much nearer sun to us. Its distance does not exceed 50 or 60 billions of miles. It has 50 or 60 billions of miles. It has a smaller star revolving around it in a period of about 50 years, but this companion star can only be seen with telescopes of considerable power. Sirius marks the south of the great hexagon. Now lifting the eyes toward the northeast, we even Procyon, the brightest star in Canis Minor, standing at the eastern angle.

and above that again appear the twin stars. Castor and Pollux, in Gemini stars. Castor and Pollux, in Gemini, which mark the northeastern angle. Between Castor and Pollux and Or-ion glows Jupiter, supreme in his splendor, and adding by his presence to the beauty of the starry hexagon. in the midst of which he appears, But as the months pass he will slowly move eastward leaving the brilliant coterie behind him. The southern quarter of the sky is

The southern quarter of the sky is not especialy brilliant at this season, as Eridanus and Cetus are broad scat-tered constellations with no very brilliant stars. The star Mira in Cetus is very famous, however, for the wonderful changes in brightness which it undergoes in a regular period of about nine months,

In the northern half of the sky

evening of the 26th.

rent. in Manhattan. Banks are the advance agents of trade. Germany England, and other foreign nations are trade. Germany planting their pomercial fortifica-tions on the lands that should be our

The Monroe Doctrine has been political instrument rather than a commercial one, but as the strongest international bond operating in the world today it fosters a sentiment of generosity that would amount to not less than preferential treaty of trade if we would but foster and develop it. But we have persistently ignored it. There is but one way fo There is but one way for a merchant or tradesman to go to Rio or Buenos Ayeres, and that is by crossing the Atlantic twice. During the last year, as Secy. Root pointed out, there sailed into the wonderful harbor of Rio over 3,500 steamships bearing foreign flags, not one of which was American. But seven times in the 12 months aid the Stars and Stripes unfurl in that sunny harbor, and each time it was borne by a cheap and inconsequential "windner," two of which were in distress

To meet this need in trade expansion to the south, the secretary of state made an earnest plea for ship subsidy to our American marine. Thus, on the platform of Kansas City were the needs of the shipyards on the ceast of Maine brought into common issue with the banks of La Salle street and the manufacturers and jobbers of the Ohio, Mississippi, and Missouri valleys.

## COMMERCIAL UNION NECESSARY

Kansas is the greatest wheat field n the world. Canada has lured many thousands of American farmers on to the bread-producing prairies of her new west, but down to the south, in the Sierra lands of Peru and Bolivia are great plateau stretches of wheat country waiting patiently for people and for plows. Had we spent in de-veloping these rich liberty-loving re-publics one-tenth of the money we have squardered on an oriental archi-peligo, we should be fatter of purse and less embarrased through the re-proaches we receive from home and abroad for departing from the primary principles of democracy into the field of colonial conquest. The time has come when the contin-



wealth will be vanguished in its struggle against spirituality, and that this country, which has been so rich in surprises to the world, will in the future, at no distant time, assume the heretofore unknown attitude of a nation becoming the uphoider of the high principles of morality and the virtue principles of morality and the virtue of justice, love, and good will, not only in a political and administrative way, but likewise in its international re-lations. By assuming that position I believe this great nation will attain a point of real greatness entirely un-known in the history of the world, and that, indeed, it will carry the pros-perity of the nation to a point un-known in the history of the great na-tions of the ancient and modern times. The United States will never have The United States will never have cause to complain of the accumulation of too much justice and too much love as you feel now that you have



have not yet solved. The planet Saturn is not particularly interesting for the amateur observ-er at present, both because it is so near the western horizon and consequently sets very early, and be-cause its rings, which, although they are of vast breadth are also exceed-ingly thin, are now nearly edgewise toward the earth, and therefore inconspicuous.

Neptune, whose position, not far from Jupiter, is indicated on the chart (both are in the constellation Gemini) can never be seen with the naked are because of its with the naked eye, because of its great dis-tance from the earth, some 2,709 mil-

lion miles. Mars, Mercury, Venus and Uranus

SAN FRANCISCO FIRE

heavens

But to return to our great hexagon: Below and somewhat eastward from Aldebaran, at a distance of some 25 degrees, is the brilliantly white star Rigel in the foot of Orion. This star narks the southwestern corner of the hexagon, and its color is in striking contrast with that of Aldebaran, as well as with that of its brilliant mate in Orion, on the upper side of the three stars of the Belt, Betclgeuse. Betelgeuse is red, but of a different tone from the red of Aldebaran. These stars are all like great living jewels, and the more one gazes at them the greater their charm becomes. Rigel is interesting as one of two stars (the other being Canopus in the southern hemisphere, and ot visible from the middle northern latitudes) which, according to the es-timates of Prof. Newcombe, probably exceed our sun in brilliancy not less than 10,000 times; it is their un-measurable distance which makes them appear to our eyes as mere glittering points in space.

January. Observing parties will go to view it from Russia and other Mars. Mercury, Venus and Uranus are now all morning stars, and con-sequently not visible in the evening sky. We turn next to the constellation. Notice the grand figure of a hexagon The lunar eclipse will be only par-tial, and only the beginning of it will

Cassiopela will be found with its pe-cular W shaped outline, buried in too much wealth.'

It would be worth all the cost of ; the Milky Way, above and to the west of the pole star, while as if play-It would be worth all the cost of a dozen fleets of trade ships if we could through them import to the United States more of that lofty spirit of international patriotism—the kind of ing at balance-board with it Ursa Major, the Great Bear, appears on the stajor, the Great Bear, appears on the other side, below and to the east of the pole star. Ursa Major is unmis-takable on account of the very per-fect figure of a huge long-handled dipper, formed by its seven principal stars. Two of these are the "point-ers" referred to in the corner of the patriotism the Trans-Mississippi con-gress in its frank, crude, western way is trying to build and foster. How. ever near we approach these ends through ships, it must not be forgot-ten that from Alaska to Patagonia ers" referred to in the corner of the it is all land. The fields of Kansas and Texas and the mines of Nevada January opens with a waning moon New moon occurs about midnight on the 14th; first quarter on the 21st, were never developed by ships. New York and San Francisco had to be folked by cold ribs of steel before we could talk of oriental trade. So must the North and South continents be united by rail before the Kansas City and full moon on the 29th. The moon will be near Jupiter on the Two eclipses occur in Januaray prophesies can be made real. The Pan-American rallroad, for so many years under the direct supervision of such skilled builders as Col. Richard C. Kerens of St. Louis, Sen. Davis of West Virginia, and Pres. Cassait of the Pennsylvania rallroad is along one of the sun and the other of the moon. The solar eclipse will be a total one, but not visible in this hemisphere. The path of totality runs across central Asia on the 13th of

the Pennsylvania railroad, is clear-ly the next great thing to do.

Kansas City, whose people are fam-ous for both hospitality and enterprise, will have no greater claim to fame than that it was the birthplace of the Pan-American Commercial union. The Trans-Mississippi congress has ex-panded its purpose from the promo-tion of half a century to the conquest of a continent.—Richard Lloyd Jones in Collier's of Dec. 22.

28th

AN ALARMING SITUATION.

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Compiled by T. E. Wilson. Street frontage burned, single, miles 160 240 Millinery stores, wholesale, re-Buildings destroyed about ..... Business buildings, about 13,000 .25,000 640 Dwellings and hotels, about 12,000 Value of business buildings sale ..... Newspapers .....\$125,000,000 burned ...... Value of contents business Oil companies, dealers, manufac-Value of dwellings and ho-tels burned turers ...... Painters' shops and paint stores 220 320 Photographers' studios...... Plumbers and gas fitters..... Printing offices ...... Value of land, buildings, and contents in burned area.... 675,000,000 Professional men and women, of-Insurance on buildings and .3.980 210 Rendered homeless by the fire....280,000 Emigration from the city......225,000 Restaurants ..... BUSINESS BURNED OUT. itationers Boot and shoe factories and stores 480 Brokers' offices, all kinds...... 80 Theaters Undertakers' parlors ..... Building and Ioan associations.... Upholsterers' shops ..... 120 Barber shops ..... Variety stores ..... Bakeries Butcher shops Blacksmith and horseshoers' shops Watchmakers' and jewelers' shops 160 NOTES. Carpenters' and builders' shops ... Earthquake April 18, 1906, at 5:13 a. Cigar stands and wholesale cigar Duration of main trembior, 45 seconds. Earthquake damage, estimated \$5,houses ..... 881 vission merchants' stores. 320 000.000 Contectionery stores, wholesale, Fire damage, estimated \$350,000,000. Deaths by earthquake and fire, re-\*\*\*\*\*\*\*\*\*\*\* Dressmakers' parlors ..... Drug stores Drygods stores Pruit stands 500 240 Fire started 5:13 a. m., April 18, 1906, Fire ceased 5 a. m., April 21, 1906, Duration of fire, three days and three Furniture stores, wholesale, reights Exodus from city lasted four weeks. Business resumed in burnt district April 22, 1906,

The West's Constructive Policy T HE most benignant law spread | tion the states east of the Mississippi upon our national statute book | river have, by constitutional right, a in recent years is the Reclamation act, which has arrested and utilized the wasting waters of our western streams, spread them over unwashed lands, and made our our deserts kind and hospitable. It has brought and is bringing to a group western states, comprising nearly half of our national domain, green gardens, prosperous people, happy homes, and thriving cities, where once even the sunseeking rattler chose not to go. The most important appeal from the American people now before their national Congress is that which asks for the improvement of the great natural waterways-the rivers which, when channeled, will bear the burden of the commerce of not less than fifty Both of these nation-building enter-prises had their birth 16 years ago, when a group of men, representing every state and territory west of the Mississippi river, organized the Trans-Mississippi Congress, which has convened annually to discuss the ways and means of giving to the west the internal expansion it is capable of sus-They elaborated the old New Eng-

They elaborated the old New Eng-land idea of democracy and gathered into a great "town meeting" the rep-resentatives of the people who claim as their home 70 per cent of our main-land. And their purpose, which is no mean one, is to make Congress repre-sent 70 per cent of our mational new 560 600 sent 70 per cent. of our national ulation rather than our national es-500

tate. The sixteenth session of the Trans-Mississippi Congress, held in Kansas City, from Nov. 20 to 23 inclusive, will be memorable in the annals of his-tory, not only because it stimulated its own advocacy of its second great task, that of improving our internal waterways, but it gave birth to ... third great campaign for the expansion of great campaign for the expansion of industry, prosperity, and peace. It in-augurated a Pan-American patriotism which, within ascentury's time, is des-tined to dominate the world.

## THE BATTIE OF OPPORTUNITY.

The states and territories repre-tented in the Trans-Mississippi Congress cover more than two-thirds of our national domain, while the popu-lation east and west of the Missis-sippi river is exactly in reverse. Ba-cause of this distribution of popula-

larger representation in the national Congress than those west of the Mississippi. Yet the western states, with a smaller congressional representa-tion, offer both to the young American and the new American a greater op-portunity than the eastern third affords. It is this fact that gave the Trans-Mississippi congress being. Its battle is the battle of opportunity This congress of the west is demonstrating that its upward of two mil-lions of square miles means prosperous people rather than millions of alluv

It is because the Trans-Mississippi congress is pleading for an expansion of industrial and commercial opportunities for Americans in a broadly patriotic rather than a provincial sense, that Secretary Root chose its sense in a secretary Root chose its sense, that Secretary Root chose its sessions, in preference to the New York Produce exchange and other eastern commercial bodies that invit-ed him, to deliver his plea for the real-ization of the commercial marriage of North and South America, which was the great drage of Deeper deniver the great dream of James G. Blaine more than 20 years ago,

more than 20 years ago. This congress struck 12 when Secy. Root delivered his notable speech on our trade relations with South Ameri-In a most logical manner he pic ca. In a most logical manner he ple-tured our rise to commercial suprem-acy, and our transition from a debtor to a creditor nation. As a matter of pure commercial expediency, he showed it to be our best opportunity to enter the South American field with our capital: to establish barks where capital; to establish banks when 10 per cent, is as secure as four per THE HUB, 50 E. First South

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