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## PHOTOGRAPHING THE STAR

An Interview with the Director of the Harvard Observatory.

feather it is, therefore, for the cap of the Harvard observatory to have made the latest addition to this notable list and, more even than this, to have won this credit twice Harvard observatory, and, oddly enough, ex-

actly two years earlier.

These stars, technically ftyled "new," are not permanent additions to the heavenly host. They come into being or into sight only to glow with an intensifying radiance for a few weeks or months and then to fade away by dissolution into gaseous nebulae. The special interest attaching to these transitory beacons of the sky is in the ma-terial which they afford to students for instructive analysis and comparison and the light which they cast on the formation of the universe and its laws. Hence astronomical acience seeks assiduously to determine the constituents of these bodies and their features of resemblance or divergence with reference to the permanent stars.

--For the extension of this scientific inves-

tigation the Harvard observatory is today pre-eminently fitted. It is by no peculiar or uncarned favor of fortune that this obser-yatory is today in the forefront of discovery, but simply because of its unequaled complete-ness of equipment in astronomical stations, appliances and observers. Its stations at Cambridge, Mass., and at Arequipa in Peru, on the slope of the Andes, afford a complete field of view of the heavens surrounding both the northern and southern hemispheres. This comprehensive range of survey is neces-sarily beyond the reach of any single station, no matter how advantageously situated or erbly equipped for observation.
t has also at Arequipa the largest refract-

ing telescope in use on the southern hemis-phere, at a point where the steadiness and clearness of the atmosphere are exceptionally favorable for astronomical work. This instrument, a thirteen-inch Boyden telescope, is not of large size compared with the thirty-six-inch Lick refractor, or with many others north of the equator, but its observaof the fact that there are so few telescopes of even moderate power in the stations south

of even moderate power in the stations south of the equator.
By the co-operation of the two stations under one general director or head every important piece of work that is undertaken can be extended according to an uniform plan so as to include stars in all parts of the sky, ranging from pole to pole. It has the most wingted complete chart of the heavens which minutely complete chart of the heavens which has ever been prepared, and it is the only observatory which is now making yearly a complete photograph of the heavens visible both northern and southern hemis-In the conduct of the work carrie on at the two observing stations admirable arrangements have been made to secure fa-cility of reference and co-operation, and tele-graphic communication is used when delay would impede or prevent the requisits investi-

To the high intelligence and completenes of these provisions must be added the special equipment of the observatory in photographic telescopes and a collection of plates of price-less value from an astronomical point of view. The Harvard observatory has the distinguished The Harvard observatory has the distinguished honor of having been the first to undertake stellar photography and of having carried the undertaking to proportions beyond any suggestion of rivalry. The first photographic image of a star was taken at Cambridge observatory by Prof. G. P. Bend and J. A. Whipple on July 17, 1850. A daguerrotype plate was used and only the brightest stars left a permanent image. A few years later the work was resumed and glass plates and many excellent photographs were thus obmany excellent photographs were thus ob-tained. In 1872 Dr. Henry Draper was first o succeed in making a photograph showing the lines in the spectrum of a star, and with proved appliances the observatory during the past ten years has made great progress in the application of the art and in its collection of

HOW STARS ARE PHOTOGRAPHED. In photographing the stars a set of lenses prepared for the purpose takes the place of the object glass in the telescope, and by the attachment of a prism to the lenses photographs of the stellar spectra are ob-tained. It is through the photographic telescopes that the recent discoveries of new stars have been made, for an examination the exposed plates showed a marked difference in the spectra which is apparent even to an untrained eye.

With the use of the most sensitive plates the faintest stars visible to the eye through the telescope have been photographed, and, in the photographs of nebulae and the most dis-tent stars, the astonishing result has been attained of the reproduction of stars too faint to be seen by the most powerful telescopes. The area of sky covered by the telescopes. The area of sky covered by the plate used by the Harvard observatory is 300 square degrees end as the total area of the sky is about 40,000 square degrees plates are sufficient to map the entire . Complete photographs of the heavens have been repeatedly made by the observatory and individual stars and clusters and region of the sky of special interest have been covered by elaborate series of plates of the utmost value to the student for the investi-gation of stellar problems. The collection

Astronomical work to the ascertainment of facts, and in the failure of astronomers to "use the rich sublimity of the cosmic side of their business." The best thing that could happen to mankind, he says, would be if a great astronomer had been burn a poet, or if a great poet should become an astronomer.

"In photography as applied to satisfact to the state of the says and the says are the says as a says as a specific to satisfact the says as a great astronomer had been born a poet, or it a
great poet should become an astronomer.
The astronomers of the Harvard observatory
are inclined to think, on the other hand, that
the illumination of mankind is not really dethe illumination of mankind is not really dethe illumination of the conjunction of the poet not combined them.

pendent on the conjunction of the poet and astronomer in the same person. The prolonged, patient and acute observation, the careful weighing of evidence and the science of the second person of the science of the scie tillo attainment that are requisite for astro-nomical advances can hardly be reconciled with the pactic temperament or faculty, and it seems idle to complain because nature has The observers at Cambridge and Arequipa are avowedly intent upon the accumulation of facts for the en-richment of our knowledge of the universe and its laws, and they have faith that the field of postical or speculative treatment will be better filled by Sir Edwin Arnold and er experts in this department of human

EXTENSION OF THE WORK. What has been done recently for the extension of the work of the Harvard observa-tory?" I asked of Prof. Edward C. Picker-ing, director of the observatory, in a recent call at the station in Cambridge.

"A 24-inch photographic telescope has

the station of Arequipa," he said. "This powerful telescope, when erected in position so favorable for observation and photographic work, will be of much service in the determination of points now doubtful and generally in the extension of our knowledge of the stars visible from the southern hemisphere. We have completed also and are now maintaining a series of stations

INTERESTING DETAILS OF THE WORK

Wonderful Collection of Pintes at the College—The Observatory at Arequipa—Telescopes South of the Equator.

(Conyright, 1825, by S. S. McClure, Limited.)
BOSTON, Dec. 27.—Particular attention has again been drawn to the work of the Harvard astronomical observatory, both by the discovery of Nova Carinae, a "new star in the constellation of Carina, and the shipment of the magnificent Bruce photographic telescope to the astronomical etation at Arequipa. During the past 2,000 years, from the beginning of the record by the famous astronomer Hipparchus, the discovering of the first so-called "new star," B. C. 124, down to the present day, only fifteen of the first so-called "new star," B. C. 125, down to the present day, only fifteen of the description have been noted, an average of less than one in a century. What a feather it is, therefore, for the cap of the Harvard observatory to have made the latest "An increase in the number of observing "An increase in the number of observing "What are the most urgent needs of astronomical research today?"

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"An increase in the number of observing "An incre

in succession. Before the coming into view of Nova Cartinae, the last in line was Nova Normae, also a discovery of the Harvard observatory, and, oddly enough, ex-

In the contrasted views of Mars, obtained from a photographic plate, and by the draw- MERCHANT MARINE CADETS cated at Charlestown, W. Va.; parents both living; father's occupation, farmer; no s.a. like that of an alligator. from a photographic plate, and by the drawings made from the telescopic observations of this planet.

"Of the invisible and immeasurable regions beyond the farthest reach of any instrument known to us today we can only conjecture by inferences from the heavens within our of Modern Seamanship. range of view. It is safe to say, however, that there is no evidence that we are approaching a limit in our knowledge of the extent of the universe."

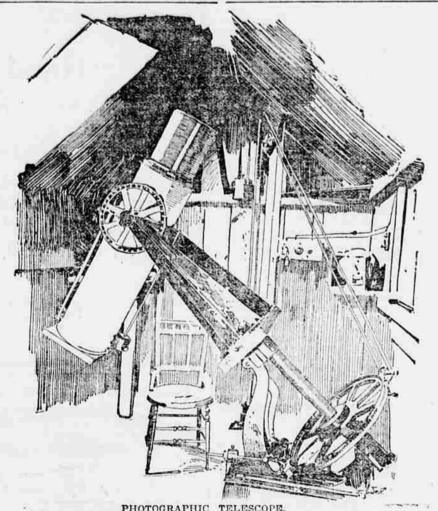
THEIR QUARTERS AND THEIR DUTIES

Upon some points of recent and curious inquiry and speculation. Prof. Pickering prefers to reserve his opinions. The visible stars are known to be of like character to our sun, and may be centers of solar sys-tems like ours, but the possible existence and number of invisible planets like our earth are still matters of surmiss. As to the existence of vegetable and animal life in any of the planets, there is still doubt and disagreement, if not open controversy. By some astronomers it is confidently maintained that Mars and Venus in particular are adapted to sustain vegetable and even animal life. Venus is so constantly enveloped in clouds that observations are difficult, but this planet is said to be apparently passing through conditions like those of our own earth ages ago. Its atmosphere is of twice the density of that of our earth, and animals

that may exist upon it would be modified correspondingly.

The atmosphere of Mars is about one-half as dense as that of the earth, and this condi-tion will produce a like modification of any tronomical research today?"

"An increase in the number of observing stations south of the equator," he replied, ber of lines is determined by such a command an increase in the power of the telescopes in these southern stations. It is a may now be safely accepted as a fact, but



equator, and only four, or one-twentieth of the whole number, in stations in the south-ern hemisphere. Of this scanty proportion, too, not one has an object glass exceeding thirteen inches in diameter, or, in other words, there is no refracting telescope south of the equator today of one-half the size of our largest instruments in North America or European stations. When we consider the comparative novelty and possibilities of the outhern field of observation it is really vexng to see endowment after endowment going into the erection of new northern observator es or additional telescopes, when the south-ern hemisphere is so destitute:

"There is a misplaced local pride, too, on the part of well-meaning contributors which insists blindly on the erection of an ob-servatory, as if it were a local monument or attraction. The atmosphere of any large city is inevitably clouded and unsatisfactory for an astronomical station, and the essential freedom from jarring cannot possibly be se-cured within city limits. Moreover, the introduction of electric lights, brilliant and detroduction of electric lights, brings as they are for city service, is found to interfere seriously with the observation of faint objects, such as comets, nebulae and zodiacal phenomena. In truth, the ideal place for the location of an observatory is in the heart of a great desert or on an isolated mountain peak, but these situations are doubtless less desirable than city streets for advertising purposes, if observatories are to be erected chiefly as memorial tablets or for the attraction of sightseers."

POSSIBILITIES OF ASTRONOMY. "What are the probabilities or possibilities of marked advances in our scientific knowl-

edge of the stars and planets?"
"Half a century ago," said Prof. Pickering,
"many people were inclined to look upon astronomy in the light of a dead science, and t must be confessed that there did not seem be great encouragement for ambitious ob servers in the discovery of noveltles with the appliances then at hand. But a great change or the better came with the application of he spectroscope and photography to astronomical research. The spectroscope may b regarded as second only to the telescope in the importance of its contributions to our knowledge of the physical properties of the stars. It has given us information of the origin and composition of the heav only bodies otherwise unattainable and also of the velocity and peculiarities of the velocity and peculiarities of their

movements. "The increase in the size and power telescopic object glasses has been remarkable also during the half century just closing. In 1850 the largest refracting teleof plates now stored at Cambridge, constructed especially for the purpose, exceeds at the addition from pear to year of about 7,000 plates is now tor at the Lick observatory today is thirty-pear to year of about 7,000 plates is now tor at the Lick observatory today is thirty-pear to year of about 7,000 plates is now tor at the Lick observatory today is thirty-pear to year of about 7,000 plates is now tor at the Lick observatory today is thirty-pear to year of about 7,000 plates is now tor at the Lick observatory today is thirty-pear to year of about 7,000 plates is now tored at Cambridge, considered at the Russian National accepts the pear to year of about 7,000 plates is now tored at the pear to year of about 7,000 plates is now tored at the Russian National accepts were those accepts were those accepts were those accepts were th six inches in diameter, and the one lately constructed for the Yerkes observation of

> The fogging of the plates on nights is already so great that posures cannot be made with telescope of large angular aperture, and any marke-increase of sensitiveness will make it im nessible to work to advantage in the vicinity of a large city on account of the illumination of the atmosphere by artificial light. It will then be necessary to take the photographs in places far from centers of population and preferably at great elevations, where the reflecting atmosphere diminished in amount.

"As to the possible enlargement by this or other means of the number of stars known to us no approximate limit can be fixed. It has been estimated that as many as 20,000,000 distinct stars will appear upon the planisphere of the visible heavens when completed by the photographic reproduction of all stars down to the fourteenth magnitude.

In the investigation of the planets, the application of the planets are considered in the planets and the planets are considered in the cation of photography is of comparatively been provided and is now on the way to slight service. This is particularly illustrated with the examination.

Of the eighty telescopes in use today, with canals constructed by creatures of high intelligence and powers. It is pointed out by the more conservative observers like Prof. Asaph Hall that Mars seen through the telescope is relatively like the moon seen by the naked eye, and the determination of even the largest objects on the face of the moor is still difficult and in dispute, as for example the question of the existence of bodies of water on this satellite. ELIOT LORD.

## TOLD OUT OF COURT.

"My first case," said a well known attorney to the San Francisco Call, "was the defense of a negro preacher in Missouri who had been arrested for stealing wood from a railroad company. A great deal of fuel had been lost from time to time, so when the culprit was arrested the company was so anxious to make an example of him that it employed special counsel and prosecuted the case vigorously. The evidence against the old man was convincing. He had been seen sneaking around the woodpile and was arrested while carrying off a load.
"I had subpoensed about twenty well known

business men to testify to the previous good character of the defendant. When the prose-cution's case was closed I put one on the stand and asked-"'Do you know the defendant'e reputation for honesty and integrity?"

"'Yes,' was the answer.
"'What is it-good or bad?"

'Bad. He will steal anything he can ge his hands on."
"A titter ran through the court room. It wasn't the answer I had expected, but it was too late, so I put on a bold front and called another. He testified as the other witness had, and the prosecuting attorney rubbed his hands with satisfaction. Before I got through with my witnesses I proved that my client was a most notorious thief, who was never known to neglect an opportunity to steal samething, no matter how trifling it might be. Then I called a couple of physicians, proved the existence of a mental disorder known as kleptomania, read some authorities to show that it was a good defense if proved, and submitted my case. The

face of facts equivalent to a license to steal. She was the daughter of a judge and she listened with languid interest to his plea, re-"I love you devotedly," he cried, passion-ately, "I am prepared to devote my life to

and submitted my case. The old preacher was acquitted, and thereafter stole with im-

for he considered his acquittal in the

"Be specific in your pleading," she can

"Do not stray too far from the point Ho hesitated and then asked earnestly:

"Will you be my wife?"
"Ah," she said, "now I see the point yo

wish to make." "I am not rich," he urged, "but I have enough to give you a comfortable home, and my prospects are bright. I offer you the love of an honest man, who will do all in his power to make you happy. I—"

She stopped him by a gesture.

"It is useless to continue at present," she said, firmly but kindly. "There are several cases ahead of yours on the docket."

"But," he protested, "I want—"
She stopped him again.
"I must insist that these matters be taken up in their regular order," she said, sharply "Put your proposition in writing and file it with my maid, and it will receive due atten-tion when it is reached in the regular course of business. I haven't time to listen to oral arguments in a case that can be as well pre-sented in briefs."

With a sigh he left and put in his tim until late that night preparing a petition for a rehearing.

On one occasion a magistrate asked a woman: "What is your age, madam?" "Whatever you choose, sir," answered th lady. "You may put down 45 years then," said the magistrate to the clerk. "What is your occupation, madam?" "Sir," said the witness, "you have made a mistake of ten years in my age." "Put down 55 years then," ment," said the magistrate; and he proceeded

Quarters, Though Plain.

Quarters, Though Plain,
Are Comfortable.

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It is rather more than two months now since the arrangement for the training of a specified number of American boys in modern seamanship on the vessels which carry ocean mails by contract with the United States

Vored, having separate drawers for their clothes, wash stands, and as good accommodations as most of the passengers.

As to their duties, it may be said that the cadets are required to learn the whole alphabet of sammanship, everything from swabbing a deck up to taking an observation.

Of course they are not worked as bard as ordinary sailers, they being only boys, and their ages ranging from 16 to 21, the average being about 19. Of course it is in the more than two months now since the arrangement for their duties, wash stands, and as good accommodations as most of the passengers.

As to their duties, it may be said that the cadets are required to learn the whole alphabet of sammanship, everything from swabbing a deck up to taking an observation. government went into effect, and all good Americans will be glad to know that it is working excellently. It was provided for in section 8 of the bill entitled "An act to provide for ocean mail service between the United States and foreign ports and to promote commerce," passed in 1891, which says:

"That the vessels with which the postranster general enters into contract for the transportation of the United States mails shall take as cadets or apprentices one Americanborn boy under 21 years of age for each 1,000 tons gross register, and one for each majority fraction thereof, these boys to be educated in the duties of seamanship, to rank as patty officers, and to receive such pay for their ervices as may be reasonable."

This provision is being carried out on three American steamship lines, the Red D, running to Central America, the Ward line, running to the West Indies, and most important of all, the American line, running between New York and Liverpool. The American line alone on its four steamers, the New York, the Paris, the St. Paul and the St. Louis, carries forty-six cadets, eleven on each of the two first named vessels and twelve on each of the two last named. Including the cadets carried on the other two lines, there are thus provided something less than 100 places for American-born boys who may desire to become officers on our great steamers, and, perhaps one day, have their share in upholding on the ocean the

glory of the American flag.

As might have been expected this enactment of congress was not at first received by the steamship companies concerned with any great enthusiasm. They regarded it as an onerous provision and prepared to comply in rather a spirit of protest. The con-sequence was that some trouble occurred at the start, chiefly due to the fact that at the start, chiefly due to the fact that insufficient care was shown in selecting the boys for this service. Some boys of rough character who behaved badly were chosen. These boys soon left and others were taken in their places, better judgment being shown this time and better results following. Now the steamship companies have become quite reconciled to the new order of things and regard the advent of the cadets with considerable satisfaction. They cadets with considerable satisfaction. They see in it an advantage for themselves and a step in the right direction as regards our

merchant marine. One of the first points decided upon by Cap-tain Shackford, marine superintendent of the International Navigation company, to whom, at pier 14, North river, all applicants for cadetships on the American line apply, was thoroughly fitted for ship duties, having already acquired practical knowledge of seamanship and navigation, and being therefore all fitted to fill the positions pros Shackford makes his selections on the recommendation of the school ship instruc-ors, the boys having thus held before them as an incentive to good work that on their graduation their diligence and success in their duties will find practical reward in these adetships, which practically mean an assured duture for the rest of their lives. t is thought that this new stimulus will have a most excellent in-fluence in the school ships and will soon bring about more fixedness of purpose among he graduates than has been noted, for of recent years hardly 25, per cent of the boys graduated from American echool ships have continued in marine life, the large majority of them having been cured of their waywardness and roving ten-dencies by the severe discipline, preferring

o abandon the sea altogether and settle down on land in some form of business. One chief reason of this general disinclination to follow the sea lay in the fact that the graduates from the school ships did not have what they have now, thanks to the cadet ships, a sure chance of advancement to the positions of officers. NOT ALL FROM SCHOOL SHIPS. It must not be supposed that Captain Shackford limits his choice of cadets entirely to boys coming to the school ships On the contrary, he is willing and glad to take American boys who come to him well recommended, and who powers the proper qualifications or aptitude for a life on the sea. Already a number of boys of good family have been chosen as cadets and in

some cases where thy have not come with some cases where in y have not come wint too lofty ideas, and not been above work-ing hard, they have given good satisfaction. The following is a list of the cadets who sailed on the St. Paul on October 30; it will be seen that several of them had no previous Experience:
F. H. Stackpole, Engineer—Born in m. N. H., June 27, 1875; educated at Hyde Park, Mass.; parents living; father's pation, electrician; two years in school ship Enterprise; graduated September 24, 1895.

W. S. Searle, Engineer-Born in Worces er, Mass., March 1, 1876; educated there parents living; father's occupation, provision lealer; two and one-half years service in chool ship Enterprise; graduated April 13

E. F. Gavagan, Engineer—Born in Bos-ton, Mass., July 21, 1878; educated there; parents living; father's occupation, carpen ter; one year in school ship Enterprise graduated September, 1895.

E. L. Jennings, Engineer-Born in Cambridge, Mass., November 29, 1878; educated at Hyde Park, Mass.; father, only, living; occupation, oil merchant; two years in school hip Enterprise; graduated September, 1895. J. H. T. Lum, Deck-Born in Oxford, enn., February 26, 1876; educated there; parents living; father's occupation, foreman of electric railway; sixteen months' sea exerience; never in school whip.

Harry Teackle, Deck—Bern in New York City, October 20, 1876; educated there; mother, only, living; eighteen months' sea experience; six months in Cuban mail steam-

experience; six months in Cunan mail steam-ship company; one year in school ship, St. Mary's\_did not graduate.

W. O. Earle, Deck—Born in Brocklyn, N. Y. August 21, 1876; educated there; par-ents living; father's occupation, plumber; one month in pilot boat No. 3 and nine months in school ship St. Mary's; did not gradu-ste.

George F. Deakyne, Deck-Born in New-castle, Del., October 9, 1878; educated at Philadelphia, Pa.; mother, only, living; two and a half years' sea experience; never in a school ship.

school ship.

C. S. Duer, Deck—Born in Gloucester county, Va., September 19, 1877; educated at Baltimore, Md.; parents both living; father's occupation, bay pilot; no sea experience.

Philip Hag-listein, Deck—Born in New York City, July 8, 1875; educated there; parents both living; father's occupation, metal spinner; ninetern and a half months' sea experience; three and a half months in Carib Price, Prine line, and sixteen months achool ship, St. Mary's. school ship, St. Mary's. C. B. Alexander, Deck-Born in Charles-town, W. Va., November 23, 1876; educated

there; mother, only, living; no sea experi-J. A. Willis, Deck-Born in Jefferson W. Va., September 17, 1877; edu-

experience

QUARTERS AND DUTIES. The cadets at the start receive \$15 or \$20 a month, in addition to good feed in the officers' mess, and snug, though not luxurious officers mess, and snig, though not luxurious quarters, down aft on the "glory hold," where two tiers of iron-framed bunks running athwart ship, furnish their sleeping accommedations. Bedding is supplied by the company, and lockers are furnished for their spare clothes. On the New York and Paris the cadets occupy the rooms that were originally intended for the chief and senior second officers are their tables. ond officers, so that they are especially fa-vored, having separate drawers for their

companies' interest to take the boys as young as possible, since they are expressly prohibited from having cadets over 21. There is some vagueness, however, in the law as to



whether an American boy, taken as a cadet before he was 21, might remain on the steamer as a cadet after passing that age. Of course in many instances before reaching 21 cadets will have been promoted by the company to permanent positions in their emcompany to permanent positions in their employ; already one such case has occurred where a boy, taken as a cadet, has been made a full quartermaster on the American line, with the salary of \$35 a month. As the months pass and the system comes into smoother working there will doubtless be many such cases of promotion.

On the four steamers of the American

many such cases of promotion.

On the four steamers of the American line the cadets are divided into watches with the officers and stand watch, four hours on and four hours off. On the Paris and the New York the cadets are kept busy on the bridge or in the wheel house where it is their duty to polish the brash work, to mend the flags and to keep everything spic-span clean. Besides this they are given every opportunity to learn to steer. given every opportunity to learn to steer, to use the sextant and to signal with the flags according to the code. In the main their duties are similar to those of the cadetships on the American line apply, was that he would, as fer as possible, select boys who had graduated from one of the three school ships, the St. Mary's of New York, the Enterprise of Massachusetts and the Syracuse of Pennsylvania, which for a dozen years have been graduating about thirty boys annually. Each one of these boy graduates is thoroughly fitted for ship duties, having already acquired practical knowledge of sesmanship and navigation, and being therefore geck.

THEY ARE KEPT BUSY It must be admitted that the cadets are kept busy, and no boy should seek one of these positions unless he is prepared to work these positions unless he is prepared to work every day until he will be glad to fail into his bunk when sleeping time comes. Some of the boys who have come from comfortable homes do not take kindly to handling the broom, and think it beneath their dignity to stand out in bad weather and "squilgee" the decks, but after all there is no royal road to seamanship any more than there is to other things worth having, and how with the right stuff in them do and boys with the right stuff in them do what they are told to do with a brave face knowing that it is for their own best interests. A practical enior was never made by looking on while some one else did the

Sometimes cadets are stationed on the eck to shift steamer chairs or sweep away falling cinders, one of them is always on the lookout on the lower bridge, and or each of the four ships of the American lincertain number of cadets are assigned he engine room, where they are divided into three watches, and stand four hours on and eight hours off. The reason for this difference in the watches is that the work in the engine room is more laborious, on account of the heat, the smell of oil and the con finement. The engine room cadets generally work under the fourth engineer, their duties being in the nature f repairing pumps, re packing cylinders and doing the endless odd obs that are always coming up in strange region, where monster engines throb

and turn unceasingly.

There is one kind of work that cadets are never called upon to do, that is the washing of the decks, which is done by the common sailors, between whom and the cadets there is a marked difference of station. The cadets are treated as petty officers, young men who will one day develop into full officers, quartermasters, lleutenants, perhaps captains. They are entitled to the pride of their possibili-ties, and besides that they get better pay than common sailors, eat better food (in fact they eat the same food as first cabin pas-sengers), and enjoy various privileges, not extended to ordinary sailors. When in port leave is often given to visit their families, When in port although the period in port is by no means one of idleness, since the cadets are re-quired to be down in the holds while the argoes are loading and unloading, to see that everything is done properly. It must be remembered that the cadets

who enter upon service in American liners are in no sense bound over as apprentices to the company. Nor do they go through anything like enlistment for a fixed period of time. They are perfectly free to leave whenever they please after the completion of a voyage, and, if they find the life uncongenial or the work over severe they need never continue it for more than three weeks. It is satisfactory to know that, while at the start, the boys of less desirable class were continually leaying and, indeed, were frequently discharged, since Captain Shackford has adopted his plan of more careful selection, the cadets are in no sense bound over as apprentices his plan of more careful selection, the cadets seem contented with their positions and show every disposition to pursue the career of seamanship seriously as it was hoped they would do. Of the forty-six cadets on the far shown themselves entirely worthy of the positions given them, and even better results than these are expected in the fu-ture. CLEVELAND MOFFETT,

OUT OF THE ORDINARY.

There are over 500 pieces in the \$15,000 get f china used at the white house. Blood in its natural state contains a prising amount of pure air, amounting to learly seven-eighths of its entire bulk. The word "and" occurs 35,543 times in the Old Testament and 10,684 times in the New

Testament. In Russia women before they can appear n a cycle in the streets have to obtain a permit from the police. All the chickens in the western part of

French Guiana are perfectly white. It is im-possible to find one with a colored feather. Nearly every army has now a bleycle corps.

The "World of Wonders," page 30, says that there is enough from in the blood of forty-two men to make a plowshare of twen-

ty-four pounds weight. A beam of light shoots through space with the proligious velocity of 196,000 miles a second, occupying eight minutes in making ta trip from the sun to the earth.

About 250,000 canaries are raised every year in Germany and, besides the 100,000 birds that are sent to America, the English market takes about 50,000, the rext best customers being Brazil, China, the Argentine Roublic and Austria, to which countries estemm are sent with large numbers of

## BILL, THE LOKIL EDITOR.

Eugene Field in "A Little Book of Profitable

Bill was alluz fond uv children 'nd birds 'nd flowers. Ain't it kind o' curious how tions as may be necessitated by pending desometimes we find a great big, awkward man who loves sech things? Bill had the biggest feet in the township, but I'll bet my wallet that he never trod on a violet in all his life. Bill never took no slack from enny man that wus sober, but the children made him play with 'em, and he'd set for hours a-watchin' the yallerhammer buildin' her nest in the old cottonwood. Now, I ain't defendin' Bill; I'm jest tellin'

Now, I ain't defendin' Bill; I'm jest tellin the truth about him. Nothink I kin say one way or tother is goin' to make anny difference now Bill's dead 'nd buried, 'nd the folks is discussin' him 'nd wond'rin whether his immortal soul is all right. Sometimes I hey worried 'bout Bill, but I don't worry bout him no more. Uv course Bill has his faults—I never liked that drinkin' business. Decisions have been reached in seventyfaults—I never liked that drinkin' business uv his'n, yet I allow that Bill get more good out'n likker, and likker got more good out'n Bill than I ever see before or sence. It warn't when the likker wus in Bill that Bill wus his best, but when he hed been ente one uf his bats 'nd drunk himself sick 'nd wux comin' out of the other end of the bat, then Bill server and the meaker, 'nd proper. then Bill wur one uv the meekest 'nd proper-est critters you ever seen. An' potry. Some uv the most beautiful potry I ever read Some uv the most beautiful potry i ever read wuz writ by Bill when he wuz recoverin' himself out'n one uv them bats, Seemed like it kind of exaulted an' purified Bill's nachur to git drunk an' git over it. Bill cud drink more likker 'nd be sorrier for it than any other man in seven states. There never wuz a more penitent feller than he wuz when he was soberin'. The trubble with Bill seemed to be that his conscience didn't come

on watch quite of'n enuff.

It'll be ten years come next spring sence
Bill showed up here. I don't know whar he
come from; seemed like he didn't talk about
his past. I allers suspicioned that he had seen trouble—maybe sorrer. I recollect that one time he got a telegraph—Mr. Ivins told me bout it afterward—and when he read it he put his hands up to his face 'nd groaned like. That day he got full of likker, 'nd he kep' full of likker for a week, but when he come round all right he wrote a pome for the paper, 'nd the name of the pome was "Mary," but whether Mary was his sister or his wife or an old sweetheart of his'n I never knew. But it looked from the pome like she was dead 'nd that he loved her.

Bill wuz the best lokil the paper ever bed. He didn't hustle around much, but he had a kind or pleasin' wa' uv dishin' things up. He cud be mighty comical when he set out to be, but his holt was serious pieces. Nebody could beat Bill writin obituaries. When old Mose Holbrook was dyin the minister sez to him: "Mr. Holbrook, you beem to be sorry that you'r passin' away to a better land?"

better land?"

"Wall, no, not exactly that," sez Mose,
"but to be frank with you, I hev jes' one regret in connection with this affair."

"What's that?" asked the minister.

"I can't help feelin' sorry," sez Mose,
"that I ain't goin' to hev the pleasure uf
readin' what Bill Newton sez about me in the
correr I know it'll be sumthin' uncommon

paper. I know it'll be sumthin' uncommon I loant him \$2 a year ago last fall.' The Higginses lost a darned good friend when Bill died. Bill wrote a poem 'bout their old dog Towze, when he wuz run over 'll bet that poem is in every scrap the country. You couldn't read that pome without cryin'-why, that pome wud hev brought a dew out on the desert uf Sary. Old Tim Hubbard, the meanest man in th state, borrored a paper to read the pome, and he wuz so 'fected by it that he never borcored anuther paper as long as he lived. don't more'n half recken, though, that the Higginses appreciated what Bill had done for 'em. I never heard of their givin' anyhink more'n a basket of greenin' apples, and Bill wrote a piece 'bout the apples nex' day But Bill wuz at his best when he wrote things 'bout the children—about the little ones that died, I mean. Seemed like Bill had a way of his own of sayin' things that wux beautiful 'nd tender; he said he loved the children they wuz so innocent, and I reckon-

yes, I know he did, for the pomes he writ about 'em showed he did. When our little Alice died I started out for Mr. Miller; he wuz the undertaker. The night wuz powerful dark, 'nd it wuz all the darker to me becuz seemed like all the light hed gone out in my life. Down near the bridge I met Bill: he weaved 'round in the oad, for he wuz in likker, "Hello, Mr. Baker!" sez he. "Whar be you oin' this time o'night?" "Bill," sez I. "I'm goin' on the saddest er-

rand uv my life."
"What d'ye mean?" sez he, comin' up to
me as straight as he cud.
"Why, Bill," sez I, "our little girl—my little girl—Allie, you know—she's dead."

I hoarsed up so I couldn't say much more. And Bill din't say nothing at all; he jest reached me his hand, and he took my hand, and seemed like in that grasp his heart spoke many words of comfort to mine. And spoke many words of comfort to mine. And nex' day he had a piece in the paper about our little girl; we cut it out and put it in the big bible in the front room. Sometimes when we got to fussin' Martha goes 'nd gets that bit of paper 'nd rends it to me; then us two kind of cry to ourselves, 'nd we make i up between us for the dead child's sake.

Well, you can see how it wuz that so many of us like Bill; he had soothed our hearts— there's nothin' like sympathy, after all. Bill's potry hed heart in it; it didn't surprise you or scare you; it jest got down in under your vest. 'nd before you knew it you wuz all choked up. I know all about your fashion-able potry and your famous poets—Martha took Godey's for a year. Folks that live in the city can't write potry-not the real, gon uine article. To write potry, as I figure it the heart must have somethin' to feed on trees 'nd grass 'nd birds 'nd flowers. Bill loved these things, and he fed his heart on 'em, and that's why his potry wuz so much

they told me that Bill died I felt that his end oughter have come some ther way—he wuz too good a man for that. But maybe after all it wuz ordered for the best. Jist imagin' Bill a-standin' for jedgment; jist imagin' that poor, sorrowful, shiverin' critter waitin' for his turn to come. Pictur, if you can, how full uv penitence he is, 'nd how full of potry would do. Of the forty-six cadets on the four American liners, about forty have thus far shown themselves entirely worthy of we only know that it is full of company compassion infinitely tenderer an' than ours. And the more I think on't the more I reckon that Bill will plead to win that mercy; for, like as not, the little ones—my Allie with the rest-will run to him who they see him in his trubble, and will hold hi tremblin' hands 'nd twine their arms about

cim, and plead with him for compassion, You've seen an old sycamore that the lighten' has struck; the ivy has reached up

Annual Statement from the Municipal Legal Department.

LITIGATION SETTLED AND PENDING

Important Cases Lost and Won by the City-What is Still on the Dockets of the Different Courts.

The report of City Attorney Connell for the year ending December 31, is practically completed, subject, however, to such alteracisions in city cases. As something over 200 cases have been handled by the legal department during the year the report will be a rather voluminous document, one which will give a brief history of each case with present status and a general resume of the operations of the department during the year. The report calls attention to the fact that the levy for the judgment fund has been twice cut in two and that although the levy

one cases during the year. The only important case in which the city suffered defeat was the Hanseem park special tax case brought by James G. Megeath and others to enjoin the city from collecting the special tax for improvements on the streets adjoining Hanscom park. The base of action was that, according to a clause in the deed by which the park was conveyed to the city the city was obliged to pay all improvements on the adjoining streets. The case has been on the court dockets for the past five years and the final decision of the supreme court was that the tax was not

The most important special tax case which The most important special tax case which was won by the city during the year was the Leavenworth street case, which had also been vigorously fought in the courts. One of the most curious cases is that of Grace Fitch, who sued the city for \$25,000 damages for personal injuries on account of a defective sidewalk. Her case was settled a defective sidewalk. Her case was settled for \$10. The plaintin is the same woman who came into public view as one of the

main witnesses in the 1sh murder case.

One of the thirty-two cases now pending in the supreme court is the Jefferson square case, which was brought to decide upon the right of the city to use the square as a site for a market house. The district court de-elded that the site could not be used for any other purpose than a park and the case was taken to the supreme court, where it is set for hearing early next month.

The mandamus case of the city against the Chicago, Burlington & Quincy Railread company to compel the defendant to repair the south end of the Eleventh street viaduct is also set for hearing at the January term of the supreme court. An alternative writ was granted by the district court, but the rail-

granted by the district court, but the rallread company appealed, and it is said that
there is every prospect that a final decision
will be obtained at an early date.

The other Eleventh street viaduct case, in
which the Union Pacific rallread is defendant, is pending in the United States circuit
court, where the city has endeavored to
obtain a decision during the past year. The
level department has received assurances that legal department has rec ivel assurances that this matter will soon be adjudicated.

Another important case now pending in the supreme court is that brought by Carlion D. Hutchinson and other property owners in Walnut Hill to enjoin the collection of the special tax for grading a numb r of streets that addition. The amount involved hout \$30,000

Cases are also pending as fellows: listrict court, eighty-two; in Unit d States court, district of Nebraska, eleven; in United states court, Eighth district, two; in county court, five.

CITY MUST PAY ITS SHARE. Lenvenworth Street Grading Consid-

ered by County Commissioners. The county commissioners met yesterday and disposed of a large amount of routine usiness. A little breeze was created by the otice that the city council had appropriated, or offered to appropriate, \$550 for the payment of the city's share of grading West Leavenworth street. Mr. Stenberg spoke in severe terms of criticism of the action of the ounced. He said that whin the grading of the street was taken up by the commissioners, in order to g t it in shape for the opening of the state fair, more than a majority

of the members of the council had pledged themselves to the payment of half of the The city's where of the expense was \$1,100 and Mr. Stenberg was astonished that the members of the council would try to get out by paying half of the amount they were pledged to pay. The mattr was referred to the committee on roads with instructions to appear before the council and seek an

to appear before the council and seek an adjustment of the claim, according to the terms of the original agreement.

On motion of Mr. Jenkins the committee on court house and jail was instructed to take the nocessary steps to have the living rooms over the county jail put in shape and set aside for the use of the county as the county as jury rooms. The protests of The Bie Publishing com-

pany against the issue of licenses to F. H. W. Sanck and Fred Koch were set for hearing by the board on Tuesday, December 31, at 10 clock.

The committee on finance reported an examination of the accounts of ex-Sheriffs Wil-liam Coburn and John Boyd and found balances due the county of \$219 from Coburn and \$291 from Boyd for fees in transporting prisoners to the reform school. The report was referred to the county attorney, with instructions to take legal steps for the colection of the amounts.

The clerk of the district court was authorized to expend \$150 for rewriting judgment

On recommendation of the finance comnittes the board voted to dispense with the services of a delinquent personal tax col-lector after January 1.

The official bonds of a large number of ninor officers were approved. By a resolution offered by Mr. Breen it was decided that hereafter the county will pay no claims until the delinquent personal tax of the claimant, if any is found, be deducted from the account of the claim. To properly identify the delinquents the clerk of the district court was instructed to furnish the correct addresses of all jurors and witnesses given certificates by the court.

Insune and a Match.

An insane man named Merriam, who has been confined in the county juil for a number of days, created quite a sensation in that institution yesterday. At 1 o'clock he piled a quantity of papers and books on the floor of his cell and set fire to them. He then yelled "Fire," with all his might. For some minutes the inmates of the fall were in a state bordering on frenzy, but the disturb-ance was allayed and the fire put out by Jailer Miller, Merriam started another fire late in the morning, and then he was put it

lighten' has struck; the fvy has reached up its vines 'nd spread 'em all around it 'nd over it, coverin' its sears 'nd splintered branches with a velvet green, 'nd fillin' the sir with fragrance. You've seen this thing and you know that it is beautiful.

That's Bill, perhaps, as he stands up fer jedgement—a miserable, tremblin' 'nd unworthy thing, perhaps, but twined about, all over with singing and pleadin' little children—and that is pleasin' in God's sight, I know. What would you—what would I—say, if we ago, making a bargain to enlarge the family What would you—what would I—say, if we ago, making a bargain to enlarge the family wuz settin' in jedgement then? Nearly every army has now a bleycle corps.

In Germany six men of every regiment are mounted on wheels to act as secuts.

The doctors of Topeka, Kan., say that there is a young negro in that burg who has the