

the whole being divided into twelve sub-sections under the names of the months. We will now briefly go through one of these sub-sections. Let us take as an example that for January, 1868. First, we have no calendar containing the ordinary information of popular almanacks, nothing more indeed than the days of the week and month. On the first opening we have the exact position of the sun in the heavens at Greenwich noon of each day, with some other information useful to seamen as well as astronomers. On pages 4 and 5 of each month the longitude and latitude of the moon is given for each day at noon and midnight, and of the sun for noon. The time of the moon's southing, and the angular value of the moon's semi-diameter and parallax, are also given. Pages 6 to 13 are occupied with the right ascension and declination of the moon for every hour throughout the month. Pages 14 to 19 contain the distances of the sun, planets, and principal stars from the moon for every three hours. These lunar distances are inserted solely for the benefit of mariners; and it is by the comparison of the observed lunar distances with those corresponding in the almanack that the longitude at sea is generally determined. Travellers also, when in unknown lands, have availed themselves freely of this portion of the volume. M. du Chaillu made an extensive series of observations of lunar distances during his late journey into Ashango Land. The geographical positions of some of the stations visited by him have therefore been determined with considerable accuracy. The late Captain Speke also used this method for determining longitudes in his explorations from Zanzibar to Lake Victoria Nyanza. The writer is able to form an opinion on the value of such observations, from a careful examination of the astronomical labours of these and other African travellers, and from the valuable geographical results he has obtained from the discussion of their observations. Pages 20 and 21 of the sub-sections contain the data for accurately computing the position of the fixed stars, useful only to the astronomer. These occupy the last pages of each month's information. This first division of the "Nautical Almanack" absorbs one half of the volume.

The second division of the work is intended purely for the use of the astronomer, and is prepared for the meridian of the Royal Observatory. It is, however, easily adapted for use at other observatories, by applying small corrections depending on the difference of longitude. We will endeavour to exhibit the contents of this division in as few words as possible. 1. We have the positions, as viewed from the sun and earth, of the planets Mercury, Venus, Mars, Jupiter, and Saturn, given for Greenwich noon of each day, and of Uranus and Neptune each fourth day. By means of the daily positions of these planets, particularly of Venus and Jupiter, the latitude, time, and variation of the compass, may be found with nearly as much facility and accuracy as by the sun. 2. The same information for the large planets, and a few of the minor planets, at the moment of transit across the meridian of Greenwich. 3. Standard places of 147 of the principal fixed stars given for every ten days throughout the year. Several of these stars, with some others, are used at Greenwich as clock-stars, from the observation of whose transits true Greenwich time is found daily. It is scarcely necessary to draw attention to the national importance of these observations, as it is now generally understood that the time of all the clocks in the country is indirectly kept in order by this daily reference at Greenwich to the great star-clock of the heavens. The mechanical and electrical arrangement made for the dissemination of true time

from the Royal Observatory to all parts of the country, now forms a most important part of the daily duties of that establishment. 4. Forty pages of the second division are occupied with the apparent positions of the moon, and of certain selected stars near her, at their respective times of Greenwich transit. By the corresponding observation of these objects on different parts of the earth's surface, a very accurate method for the determination of the difference of longitude between any two places is obtained. 5. The remaining portion of the book contains principally full details of all miscellaneous phenomena. First we have eclipses visible in 1868, with the elements of calculation. Then a list of stars occulted or obscured by the moon passing over them. These are succeeded by an extensive list of the phenomena of the moons of the Jovian system, consisting of eclipses in the shadow of Jupiter, transits over its disc, disappearances behind the body of the planet, together with the dark shadows of the satellites on the planet. Accurately computed times of the principal phenomena are given, and approximate times for the remainder. The concluding portion of the almanack contains a list of the principal planetary phenomena; elements of Saturn's ring; the libration of the moon; time of high water at London Bridge daily, and at various ports and places at the full and change of the moon; a few tables used by nautical men principally; a list of public and private observatories; and finally, an explanation of the different sections of the work.

In addition to the preceding valuable matter, the almanack contains rough ephemerides of the minor planets. In the volume for 1870, and in future volumes, these are intended to be omitted, as they are published in the Berlin Astronomical Almanack in fuller detail, and consequently more useful to the astronomer.

The United States of America also publishes a "Nautical Almanack," prepared by order of Congress. It is almost a fac-simile of our own with regard to the contents, the arrangement of the tables being copied as nearly as possible from the British "Nautical Almanack." France has also its national ephemeris, known by the name of the "Connaissance des Temps." It cannot bear comparison with ours. The "Berliner Astronomische Jahrbuch" is a valuable work, especially for the great attention given to the minor planets. Several other countries have their astronomical ephemeris; for example, the Milan ephemeris, and those of San Fernando, in Spain, and Coimbra, in Portugal, are well known to astronomers.

When the new series of the "Nautical Almanack" was first published, it was established as a rule that the work should eventually appear yearly four years in advance. Although since 1834 the establishment of ocean steamers has so practically shortened the distance between opposite portions of the globe that there is no longer the same object for such early publication, yet it has been thought advisable to continue the system as originally designed. In 1867, therefore, the volume for 1871 appeared, while the computers are engaged on years still farther in advance. The annual circulation amounts to more than 20,000 copies.

HER MAJESTY'S MAIL IN THE FAR-WEST.

BY J. K. LORD, F.R.S.

"Our English post-office is a splendid triumph of civilisation." In this memorable saying of Lord Macaulay, reference is made not merely to the postal organisation of the United Kingdom. The chief office in London, the railway mail-vans, the travelling post-offices, and



HER MAJESTY'S MAIL IN NORTH-WEST CANADA.

the whole arrangements for the collection and delivery of letters, are wonderful results of well-devised organisation and ably-directed labour. In all its most conspicuous parts the machinery is so perfect, and works with such smoothness and regularity, that we are apt to forget the vastness and variety of the service. But it is not alone in the organisation and working of the home department that "our English post-office is a splendid triumph of civilisation." In the remotest bounds of the empire the service is sustained with marvellous results. Our picture carries the mind to regions whose wild solitudes were never startled by the railway whistle, nor cheered by the mail guard's bugle. Yet, even in the far-west of British America the postal service displays an energy, punctuality, and order such as may stir all other public departments to envy and emulation. The lonely English occupant of a hunting-station or fur-store in the wilds of North-west Canada, looks not in vain for the welcome despatches from "home." Where railways are not, and wheel carriages find no road to run upon, the mail is taken up by sledges, and the Indians, with their dogs, represent the officers in charge of Her Majesty's mails.

My readers will better understand the kind of out-posts and stations to which letters are conveyed, by perusing the following paragraph extracted from the "Quebec Chronicle":—"Travellers by steamer up the river Ottawa will have observed on the north shore of the Lake of Two Mountains a small village situate on a cliff, showing a face to the lake of bright yellow sand; and they have been told that they see an Indian village. The community here resident have just petitioned for the establishment among them of a post-office. The memorial has the signatures of Irroquois and Algonquin chiefs—Saoatis-kurai-iarakoen-kane-gatake, Jakomisakie, L. Satehasenoten, Sosekatsien Hainton, B. Kekatewaje, and others. It is proposed to give the village the name of Oka."

But the postal service in Canada reaches far beyond such villages as Oka, whose population rejoices in names astounding to a London letter-carrier. During part of the year Her Majesty's mails are sometimes forwarded two thousand miles, after losing the help of all steam or horse-power.

In the summer months the mails are conveyed to all the settlements along the lake shores by steam-vessels, and these huge fresh-water seas afford every facility for a safe and rapid navigation. But when the lakes are covered with a stratum of ice, strong enough and of sufficient thickness to bear up the traffic of London, then a very different system of transport is necessitated. Contracts are entered into by the postal authorities, for the transmission of the mails, with persons who quite understand the work. Throughout all the lake districts on Lakes Huron and Superior the contracts are generally sub-let to Indians and half-breeds, who travel on snow-shoes, and pack the mail-bags upon light sleighs, which are usually tugged along by six dogs, worked in pairs side by side, as shown in our illustration. By providing frequent relays, and, at the same time, being perfect masters in the art of travel, these hardy mail-carriers contrive to transport the letters at the rate of about sixty miles a day.

It was once my misfortune, when cruising in a little schooner upon Lake Huron, to be caught in the ice, and frozen in hard and fast near a small settlement called Croz-ka-awning. As the dwellers at this desolate village had no more provisions for the six months of biting winter before them than were barely sufficient to supply their own wants, I had no alternative but to pack up a small

bundle of necessaries, put on my snow-shoes, and tramp off for the nearest place whereat I could pass the winter, leaving my vessel and my tiny crew to take care of themselves as best they could. The haven of refuge towards which I bent my steps was the Bruce mine—a copper mine situated on the north shore of Lake Huron.

Winter commences in this icy region about the beginning of October, and when once the ice has fairly "set" on the lakes, all communication with the rest of the world is entirely cut off—excepting the traveller resorts to the employment of snow-shoes and dog-sleighs—until May in the year following. As an illustration of the intensity of the cold, I may state that the carcasses of sheep, pigs, and bullocks intended to be stored for the maintenance of the miners and their families during the winter, are exposed to the air immediately after they are killed and skinned, until frozen as hard as marble. After that they are hung up in large sheds to be consumed as required. The freezing is a perfect preservative; meat so treated, if kept from thawing, would remain sound and good for years. To be eaten, a joint is chopped off with an axe, soaked in tepid water until sufficiently thawed, and then cooked in any manner best suited to the tastes of those who are going to devour it.

But my present object is to tell how, in this out-of-the-way place, our communication with the rest of the world was kept up, and to describe Her Majesty's mail in these regions.

I have sometimes travelled with the mail-carriers from place to place along the route, and I can truthfully say that it is scarcely possible to picture a more weird scene of desolation than a wide expanse of frozen lake, covered thickly with snow, presents to the eye, more especially when journeying through the night—a course generally followed if there happens to be a sufficiency of light to discover the track. Night travelling is always preferable, because the snow is less trying to eyes by night than it is during the day; hence the risk of becoming snow-blind is materially diminished. Nothing seems to retain any semblance to reality as we tramp along over the snowy waste, with the dogs trotting after, jingling their sleigh-bells. The silvery moon spreads her pale light upon the snow, and the rays, instead of being absorbed or reflected, seem, by some mysterious agency, to accumulate, until one is tempted to believe himself splashing through a shallow lake of light. Every visible object appears to be transformed into something intangible and unreal; the tracks upon the snow grow into huge proportions; trees dotted along the lake shore resemble giants such as we read of in fairy tales; a hillock of drifted snow takes the appearance of a mountain. Now one fancies rippling water is directly in the path, which, on a nearer approach, proves to be only snow ridged by the breeze, reflecting the light from the burnished facets of its myriad crystals. Anon, you feel certain that a deep ravine is directly in the way, the gloomy depths of which will have to be traversed; but the heart throbs more lightly when the imaginary cleft turns out to be only the shadow of a passing cloud. The silence is intense, and the listening ear fails to catch the faintest sounds, except it be the breathing of the panting dogs, the cheery tinkle of their neck-bells, and the rough crunch, crunch of the snow-shoes as they splinter the crisply-frozen crust upon the snow. How vividly these scenes come back to my memory! I can recall even now the various incidents that marked each night journey over the ice-covered waters of Lake Huron.

The arrival of the mails at the mines was so punctual,

that the day on which they were expected was kept as a kind of general holiday. The miners left their work, and the women and children their warm stoves, to group together upon the landing-place where the sleigh track led off across the lake; and it was quite a study to watch the many anxious faces gazing intently into the hazy distance, in hopes of being first to catch a glimpse of the bearers of the good or bad news, as perchance it might turn out to be, from the "old country."

The keenest and best-sighted at last proclaims the coming of the mail; others very soon make it out—a mere speck, however, as yet—moving over the snow towards the mines. Nearer and nearer the loaded sleighs approach, and soon they are at the landing, when fifty willing hands rapidly unpack the sleighs, and sturdy men rush off with the bags of letters to the primitive post-office. There is no such institution as a postman; hence the system of delivery is managed in this fashion. The postmaster unlocks and unseals the letter-bags, and tumbles their contents out upon a large table; then, picking up a letter and reading the address, he proclaims, in a stentorian tone of voice, that there is a letter for—say Jack Robinson; then Jack Robinson comes to the front, and, if there is any postage due, he has to pay it before he can obtain his letter; and so on the postmaster reads the addresses and delivers the letters until the stock is exhausted. The post-office presents a singular spectacle after the distribution of the mail, which comes only about once a month. The assembly divide into little groups, and each group has its own joys and sorrows. All is in public, compared with the privacy with which letters at home are perused. Soon the groups break up and disappear, and each goes back to his daily avocation; the Indians and the dog-sleighs take their departure; and everything settles down into the hum-drum routine of daily life at the mines, until the recurrence of another month brings about a similar scene on the arrival of Her Majesty's mail.

THE CHINESE NEW YEAR IN BATAVIA.

BY THE REV. DR. J. MUEHLRISEN ARNOLD, BATAVIA.

LIVING in this great emporium of the East, I have opportunities of observing the customs and manners of various nations. The Chinese form a large proportion of the population. I send a sketch of "The Chinese New Year in Batavia," as likely to interest the readers of the "Leisure Hour."

The chronology of the Chinese commences 2637 before Christ, and counts by cycles of sixty years each. The year 1868, according to this calculation, is therefore the fifth of the 76th cycle. The Chinese years are properly speaking *solar*; yet, since the months are always *lunar*, the year is dependent on both luminaries. The new moon which is nearest the 15° of the sign of Aquarius, when the sun enters into that sign, is always the first day of the new year.

The Chinese months are alternately large and small, *i.e.*, they have either thirty or twenty-nine days. Since, however, such a year of twelve lunar months amounts only to 355 days, there is interpolated every third year, at the time when the sun does not enter into any zodiacal sign, an "after month," an "after March," or an "after August," by which the year receives thirteen months. The sun, therefore, once more obtains the mastery; and there is a vast deal of stupid superstition mixed up with it. At a solar eclipse, the Chinese say, "The celestial dog devours the sun;" and the Emperor commands all officers of state to throw themselves into mourning, and to pray that the sun be spared

in this hour of trial. If clouds cover the sky so as to prevent the solar eclipse being seen, the Emperor receives the congratulations of the people, "because Heaven, for the sake of the imperial virtues, spares the eyes of his Majesty from so sad a spectacle!" Before proceeding to a brief description of the new year, I wish to name that the day by the Chinese is divided into twelve *shishin* instead of twenty-four hours.

The new year, which this year (1867) fell on the 18th of February, is always an occasion of unbounded festivity and hilarity, as if the whole population threw off the old year with a shout, and clothed themselves in the new with their change of garments. Preparations go on for five days before; but evidences of the approach of this chief festival appear some weeks previous. The principal streets are lined with tables, upon which articles of dress, furniture, and fancy toys are disposed for sale. You see monster frogs in coloured paper, horses, birds, crocodiles, some of them showing considerable artistic design. The expense incurred is considerable, and often curious relics are brought forth to turn into money. Superiors give presents to their servants and dependants, and shopkeepers send an acknowledgment of favours to their customers. We received sugar candy and sweetmeats. One of the most common gifts of the lower order is a pair of slippers.

Among the stands for presents are other tables at which persons are seated, provided with pencils and gilt red paper of various sizes, on which they write appropriate sentences for the season, to be posted upon the doorposts and lintels of dwellings and shops, or suspended from the halls; to which I shall presently refer.

Small strips of red and gilt paper, some bearing the word *fa*, happiness; large and small red candles gaily painted, and other things used in their worship, are likewise sold in stalls and shops. As if to wash away all the uncleanness of the past year, water is applied profusely to everything in the house.

But a still more praiseworthy custom is that of settling accounts and paying debts. The shopkeepers wait upon their customers, creditors, and debtors, to settle matters. No debt is allowed to overpass the next new year without settlement or arrangement of some sort, if it can be avoided. Many wind up by bankruptcy, and the general consequence of this great pay-day is scarcity of money, resort to the pawnbrokers, and low price of all kinds of goods and articles. As the old year departs, all the account books in Chinese shops are burned. Devout persons, of whom there are but few, also settle with their gods, and during a few days before the new year the temples are usually thronged by devotees, both male and female, rich and poor. Some fast, and engage priests to pray for them, that their sins may be pardoned, while they prostrate themselves before the images, amidst the din of gongs, drums, and bells, and thus clear off the old score. Crackers are fired off to drive away evil spirits, and the worship of the ancestors, as usual, takes the precedence.

On New Year's Eve the streets are full of people, all hurrying to and fro to conclude any business still left undone. Some are busy pasting the five papers upon their lintels, signifying their desire that the five great blessings which constitute human happiness may be theirs—namely, long life, riches, health, love of virtue, and a natural death.

Above these are pasted sentences like these:—"May the five blessings descend upon this door." Or, "May rich customers ever enter this door." Or, "May Heaven confer happiness." The door-posts of others are adorned with plain, or gilt and red paper.