THE END OF THE CENTURY.

M. CAMILLE FLAMMARION TELLS WHEN AND WHERE THE NEW CENTURY WILL BEGIN.

An authoritative answer to the all absorbing question when the new century begins has just been given by M. Camille Flammarion, the distinguished astronomer and author. An authoritative answer from such a source may well be styled, since this is a subject on which he is peculiarly fitted to speak with authority. Chronology and astronomy are closely allied, and being an adept astronomer, M. Flammarion is necessarily also specially well qualified to grapple with any problem, the solution of which depends on a right understanding of chronology.

From his statement, which covers the ground thoroughly, the following passages are taken:

"If we look back at the past, we find documents of the year 1799, 1800 and 1900 on which this subject was discussed, and a century hence, in 2000, our descendants will be discussing the same old subject. A century ago the discussions were noisily lively, and extended even to the theatre. In 1800 a play appeared with the title, 'Pour Qui, en Quel Siècle Sommes-Nous?' This very question we of to-day are again asking.

"Camille Sainte Saëns, the distinguished critic, says the year 1900 will be the dawn of the twentieth century. He is mistaken. The dawn of the twentieth century will not come in 1900, even though we constantly hear that the Exposition of 1900 will commemorate the birth of the new century. On the contrary, it will commemorate the end of a century, the year 1900 will be the evening before the new century, and the dawn will not begin until after midnight.

"This seemingly difficult problem is really very easy of solution. A dozen consists of twelve units. The number 12 is a part of the dozen. One hundred consists of one hundred units, and the number 100 is a part thereof. Now, it is clear that there never was a year 0 in Christian chronology. The first year was No. 1, the tenth year was No. 10 and the hundredth year of the first century was the year 100.

"What has led many persons astray has probably been the change in the first two figures of the year, as we see in the case of 1799-1800 or 1899-1900. A similar change, however, is made when 9 becomes 10, or when 99 becomes 100. If any one gives me a hundred cents I have a dollar, but the hundredth cent is just as necessary to make that dollar as the first one. My hundred and first cent is the beginning of my second dollar, the hundredth cent is, in fact, a necessary part of the dollar.

"We take manner the hundredth year of a century, which is dying. Exactly, therefore, at midnight of December 31st, 1899, will the hour glass of the nineteenth century run out, and the next moment the twentieth century will start on its career."

M. Flammarion then touches on another interesting question.

"We know now when, but do we know where, the new century will begin? he asks. "Will it begin exactly at midnight in Paris, London, New York, or Jerusalem? Exactly at midnight in every country, is the answer. Yes, but when it is midnight in Paris it is one a. m. in Vienna. Will the Austrians then begin the century before the French? Certainly they will. And this brings up a timely question. What country will be the first to greet the new century?

"When the clocks in New York indicate that it is midnight on December 31st, 1900, it is already five o'clock in the morning of January 1st, 1901, in Paris, seven o'clock at the Suez Canal, eight o'clock in Tananarive, and 12 o'clock, noon, of January 1st, 1901, on the island of St. Paul, in the Indian Ocean.

"If, instead of going east, we go with lightning speed westward from New York, we shall find it eleven o'clock in the evening in Chicago, nine o'clock in San Francisco, six o'clock in Honolulu, half-past three o'clock in the Philippines, and noon of December 31st, 1900, on the island of St. Paul. This island, as anyone can see by looking at a map, is exactly opposite New York, or, in other words, its distance from the South Pole is precisely the same as that of New York from the North Pole.

"When it is midnight with us it is noon there, but the question is, is this the end of the next day or of the preceding one? To sailors this is a matter of some importance, as their captains have to decide whether they shall or not give a day's wages when they arrive at this point.

A FORTUNATE ISLAND.

"Those who will have the honor of recording the first greeting to the new century, for the reason that it will actually begin there before it begins elsewhere are the Russians in Kamchatka, the Japanese in Tokio and on the island of Yeso, the inhabitants of the Philippines, of New Guinea island, of the Solomon Islands and of the New Hebrides, the French in New Caledonia and the inhabitants of New Zealand and of the little island of Chatham, in the Pacific Ocean.

"The people on this island will be able to greet the new century before any one else, but it is not probable that a similar privilege will ever again be theirs, for the reason that there is not likely to be a living soul on the island a century hence. A hundred years ago there were 2,000 men there, and in 1830 there were 1,500. Five years later, however, a number of Maoris visited the island and ruthlessly began to destroy the inhabitants. In 1870 there were only 200 persons on the island, and at present there are hardly more than 50.

"Let every one, however, remember distinctly that the twentieth century will begin in every country at midnight of Dec. 31st, 1900. The Asiatics will begin to enjoy it before Europeans, and Europeans before Americans. No one, not even the richest man in New York, can obtain the privilege of being the very first to greet it—that is unless he is willing to travel to the distant Island of Chatham and join the handful of inhabitants in singing a paean of welcome to the new cycle.

M. Flammarion concludes by expressing the hope that during the coming era a satisfactory plan will be discovered of putting an end to all international wars. It is earnestly to be hoped, also, he says, that civilized nations will unite in efforts to further the cause of humanity.

Some of the most noted statisticians and chronologists of the day have maintained during the last few months that the present century will not end until the end of next year, and the Herald has pointed out how many recent arguments there are in favor of this view. M. Flammarion, as we see, is of the same way of thinking, and there is no doubt that his lucid exposition of the subject will have much weight with those who know how well qualified he is to give a decisive answer in matters of this kind. New York Herald.

BIRDS OF WAR.

Carrier Pigeons in Modern Military Service.

The pigeon post established at Ladysmith and Durban for carrying war messages has been such a success that the special appropriations for increasing the service will be recommended by the War Office. A good deal of the success of the pigeon service is due to the skill and energy of Col. Bissard, of the Royal Engineers, who has spent years in pigeon culture for just this sort of an emergency, and he has demonstrated the fitness of the birds for war purposes. Col. Bissard, who was stationed at the Cape before hostilities broke out, systematically trained his pigeons for carrying messages across the rough, mountainous land and his various pigeon posts were of the greatest value in keeping the home office apprised of the exact condition of the army.

Nearly every civilized government now has carrier pigeons connected with both their war and navy departments. France has entered into pigeon culture more extensively than any other European power, and it is roughly estimated that there are 250,000 pigeons in that country trained for war emergencies. The main pigeon post or training station is at Chalons. Where several thousand birds are kept all the time. Every frontier post and fortress has smaller lofts and three times a week regular communication is kept up between these places by means of the pigeons. This pigeon post in constant practice in times of peace would be of immediate service in times of war. The state protects the carriers and anyone caught shooting a pigeon of any kind in France is heavily fined. The pigeon service has been established in France since 1870.

The German war department owns about 40,000 pigeons, but they have a system of reserves which they can call into service in times of war. The owners of private lofts have to register their carrier pigeons, and the war department knows exactly how many of the birds it can obtain at a moment's notice.

The Austrian Government also relies largely upon private owners' pigeons for service in times of war. Every bird in the country has to be registered, and no one can be sold or sent out of the country without permission. Since 1876 a few thousand pigeons have been in regular service at the fortresses and frontier posts. Russia has a military pigeon system, which is maintained by the officers in the corps of engineers. Little is known about her system, except that lofts are scattered throughout the empire, including Trans Siberia. The lofts are used on the winter months in the latter place seriously interferes with the success of the pigeon post and partly neutralizes the good effect of it. Italy's pigeon post was established in 1872, and Spain and Portugal inaugurated similar systems a few years later.

There are 4,000 homing pigeons on the books of the British navy and several times this number on the books of the army. In the last ten years the United States Army and Navy Departments have been interested in the carrier pigeons, and we have posts established at different points throughout the country. Their services have been useful chiefly in the navy, and experiments are being made constantly in communicating by this means between the shore and the ships. There is no system of registering homing pigeons in private lofts, and in an emergency the Government in need of more pigeons would have to depend upon the patriotism of the private owners for increasing its supply. That there would be plenty of volunteers no one doubts a moment.—Collier's Weekly.

DEFENCE OF PRETORIA.

Formidable Circle of Forts Mines and Entrenchments

READY FOR A LONG SIEGE

The despatch of a siege train from England to South Africa is an indication that the British Government anticipates the investment of the Boer capital before the war is brought to a conclusion, says the New York Sun. Considerable interest, therefore, attaches to a description of the defences of Pretoria, which, according to report, are of the most modern description and formidable in their completeness.

They consist of five powerful forts and five lines or miles and enormous entrenchments with redoubts, the latter being so built as to cover all the approaches to the principal points of the defence. The centre of the system of forts lies about 1,200 yards to the westward of the northern end of Pretoria, and has a radius of something more than 7,000 yards. The centre of the city itself is only about 6,800 yards, nearly one south, from the fort on Signal Hill, which is about 400 feet above the point on the west side of the railway to Johannesburg, and about 1,000 yards from the fort on the hill to the east of the railway, and the Apies River running to the north. Between this fort and the river are the fountains that furnish the water supply of Pretoria. The distance between the forts on either side of the railway is 2,700 yards. The railway station where the lines from Johannesburg on the south, Delagoa Bay on the east, and Pietersburg in the north form their junction, is immediately outside the city on the south side. The railway to Pietersburg, after winding some distance to the westward, passes out of the plain on which Pretoria is situated, through the Daspoort or defile in the range of hills behind the city, through which also the Apies River runs, the railway and river running together across the plain through the Winderboom Poort, under the guns of a large fort 7,000 yards, and a little to the eastward of north, from the centre of Pretoria.

The westernmost fort is on the range of hills behind Pretoria, and lies at a distance of 10,300 yards northwest of the centre of the city. The powerful redoubt, to the southwest of Pretoria, 3,800 yards from the centre of the city, on the range of hills through which the transport road to Johannesburg passes, completes the circle of the larger works defending the Boer capital. Behind this redoubt are the principal magazines, one excavated out of the solid rock with a bomb proof roof, and the other built into the kloop, also bomb proof. Communication between the redoubt and the last mentioned magazine is by means of a covered way. Roads connect all these forts with the capital, and they have pipes laid for water, as well as electric cables for the search lights.

The number of guns mounted on the forts and redoubts is said to be 120 of large calibre and quick-firing of different kinds. It is stated that some of the guns are of twenty-three centimetres calibre, but this is doubtful. It is known, however, that there are quite a number of 15 centimetre guns of French make from the Creuzot works and of long range, as has been shown by their performances at Ladysmith. Among the others there are Krupps, Maxims and other machine and quick-firing guns.

The forts are open to the rear toward Pretoria, and are of masonry, heavily faced with earth toward the open country. On the east side of this circle of defence there was no regular fort in existence when hostilities began, but it is probable that since then the ridge to the eastward of the city, by which the railway to Delagoa Bay runs, has been fortified.

The siege train just shipped from England for South Africa, presumably for Pretoria, is the second sent out during the last forty-six years. The last occasion was when sixty-five guns and mortars were sent from Woolwich for the siege of Sebastopol, where, with fifty ship guns, they took part in the bombardment of that city in conjunction with the French siege train. The Russian defence, however, developed so rapidly under the insiration of Todleben, that before the final assault which placed it in the hands of the allies, the number of guns in position in the besieging batteries had been raised to 806. The train now on its way out from England comprises 30 howitzers, 12 of 8 inch calibre, 8 of 5 inch, and 8 of 4-inch. The number is not formidable in itself under the old conditions in regard to explosives, but if they are, as may be inferred, intended to throw lyddite shells, it is an exceedingly formidable armament, and, unless the Boers are in possession of projectiles, charged with melinite or some similar high explosive with which to respond to the British fire, the siege of Pretoria should not be of very long duration. It is calculated that the investment will require fully 12,000 British troops, leaving the remainder of the army to guard the communications, occupy certain strategic points and operate against that part of the Boer army not required for the defence of Pretoria. This part of the Boer army is expected to fall back into the north in the Zoutpansberg Mountains which the Boers are reported to intend to make their stronghold, and where they expect to carry on the war against England indefinitely.

The Hudson Bay Company has shipped a carload of Canadian horses to the New Zealand Government.

The remains of 151 dead sailors, victims of the Maine, arrived at Washington at 8 o'clock this morning over the Chesapeake & Ohio Railroad, on a special train of six cars.

AS MR. DOOLEY SEES IT.

It Doesn't Pay to Underestimate an Enemy.

RUMINATE ON BOERS WAR.

"What d'ye think iv th' war?" Mr. Hennessy asked.

"I think I want to go out an' apologize to Shafter," said Mr. Dooley. "I'm like ivrybody else, be hivins, I thought war was like shootin' glass balls. I never thought iv th glass balls thrathin' a dynamite gun on me. 'Tis a thrait iv th' Anglo-saxons that we think iv an inimy as a target. If ye hit him ye get three good cigars. We're like people that dreams iv fights. In me dhreams I never lost one fight. A man I never saw before comes up an' says something to me, that I can't remember, an' I climb into him, an' 'tis all over in a minyit. He never hits me or 'if he does I don't feel it. I pat him on his face an' bate him to death. An' then I help myself to his watch an' chain an' he frinds come an'round an' say, 'Martin, ye haven't a scratch,' an' congratulate me an' I wander around th' streets with a chip on me shoulder till I look down an' see that I haven't a stitch on me but a short skirt. An' then I wake up. 'Tis ivr knockouts to me credit in dhreams wud make Fitz immons look poor. But ne'er a wan iv them was printed in th' papers.

"'Tis so with me frinds, th' hands across th' sea. They want to sleep an' had a dhream. An' says they: 'We will sind down to South Africa th'm gallant throops that have won so manny hard fought reviews,' they says, 'capitaned,' they says, 'be th' Lower iv our aristocracy,' they says. 'An' when th' Boers come out armed with rollin' pins an' Bibles,' they says, 'we'll just go at them,' they says, 'an' walk through them an' that night we'll have a cotillyon at Pretoria to which all frinds is invited,' they says. An' so they deposit their intellects in th' bank at home an' th' abovementioned beggars goes out in th transports iv patriotism an' poetry. An' they's a meetin' iv th' cabinet an' 'tis decided that as th' war will only last wan week 'twill be well f'r to begin renamin' th' cities iv th' Transvaal after her poplar English statesmen—Joechimbe, Ianville an' Rhoosedorp an' Belfonein. F'r they have put their hands to th' plough an' th' sponge is squeezed dhry, an' th' sands iv th' glass have run out an' th' account is wiped clean.

"An' what's th' Boer doin' all this time? What's me frind th' Boer doin'? Not sweepin', Hinnissy, mind ye. He hasn't anny dhreams iv conquest. But when a man with long whiskers comes r'ridin' up th' r-road an' says, Jan Schmidt or Pat O'Foole,' or whativer his name is, 'ye're wanted at th' front,' he goes home an' takes a rifle from th' wall an' kisses his wife an' childer good-bye an' puts a Bible in the' tails iv his coat an' a stovepipe hat on his head an' thramps away. An' his wife says: 'Good-bye, Jan. Don't be long gone an' don't get shooted.' An' he says: 'Not while I've got a leg undher me an' a rock in front iv me,' he says. I tell ye, Hinnissy, ye can't beat a man that fights f'r his home an' country in a stovepipe hat. He might be tempted f'r to come out fr'm cover f'r his native land, but he knows if he goes home to his wife with his hat mussed she won't like it, an' so he sets behind a rock an' plugs away. If th' lid is knocked off he's fatally wounded.

"What's th' raysult, Hinnissy? Th' British marches up with their bands playin' and their flags flyin', f'r 'tis a thradition iv th' British army that war is bein' shot at. That's wrong. War is shootin' at th' other fellow. An' th' Boers squat behind a cowbiher or a three or set comfortable in th' bed iv a river an' bang away. Their on'y thradition is that it's better to be a live Boer thin a dead hero, which comes, perhaps, to th' same thing. They haven't been taught f'r hundhreds iv years that 'tis a miracle f'r to be an officer an' a disgrace to be a private sojer. They know that if they're kilt they'll have their name printed in th' pa-apers as well as th' Markeys iv Doogleberry that's had his eyeglasses shot out. But that ain't lookin' f'r notoriety. All they want is to get home safe with their country free, their honor protected, an' their hats in good ordher. An' so they hammer away an' th' inimy keeps comin' an' th' varyous editions iv th' London pa-apers printed in this country keep standin' a line of type beginnin', 'I regret to state.'

"All this, Hinnissy, comes fr'm dhreamin' dhreams. If th' British had said, 'This anc'ean an' raypeecious people that we're against is also very tough. Dirty though they be, they'll fight. Foul though their nature is, they have cairtridges in their belts. This not bein' England an' th' inimy we have again us not bein' our frinds, we will f'rget th' glorious thraditions iv th' English an' Soudan armies an' instead iv r-rushin' on thim, sneak along yon ki'k fence an' hit thim on th' back iv th' neck,' they'd be less 'I regret to states' and more 'I'm p'azed to reports.' They would so, an' I'm a man that's been through columns an' columns iv war. Ye'll find, Hinnissy, that 'tis on'y armies fights in th' open. Nations fights behind threes an' rocks. Ye can put that in ye're little book. 'Tis a sayin' I med up wan day along."

"We done th' same wan ourselves," said Mr. Hennessy.

"We did that," said Mr. Dooley. "We were in a dhream, too. Th' on'y thing is th' other fellow was in a thrance. We woke up first. An' annyhow I'm goin' to apologize to Shafter. He may not have anny medals f'r standin' up in range iv th' guns, but, be hivins, he never dhrove his buckboard into a river occupied be th' formerly loathed Castile."

BUREAU OF MINES REPORT.

Deals With the Mineral Deposits of the Province.

The Bureau of Mines has issued the second part of its annual report, which deals largely with the copper regions of the upper lakes, the Nipissing, Algoma boundary, Goulais River to Dalton; corundum in Ontario, Michipicoten, Parry Sound district copper, gold in the Lower Seine, and a lot of other information concerning the mineral wealth of the Province.

A table is given showing that for the first nine months of this year 20,210 ounces of gold was taken out, being valued at $318,212, as against 7,151 ounces in 1896. The total value of metallic products in 1893 was $602,862, and in 1896 $963,288. For the nine months of the present year it has been $1,657,100, and if the same rate of production be maintained to the end of the year, it will reach $2,200,000. The total value of the metals produced in the Province for the twelve months of last year was $1,655,968, made up of $290,949 gold, $51,960 silver, $514,220 nickel, $268,080 copper and $530,789 pig iron. The revenue from sales and leases of mineral lands has been $147,666 for the nine months of the present year, as compared with $97,762 for the whole of 1898, $46,588 for 1896, and $26,159 for 1895.

Silver to the amount of 98,000 ounces was taken out this year, valued at $58,800. Nickel and copper brought $566,633, as against $487,660 for the whole of 1896.

Prof. A. P. Coleman reports on his trip to the north channel on the northeast of Lake Huron, and the northeast shore of Lake Superior. He says a few properties are likely to develop into valuable copper mines, but that a large majority do not look particularly promising. Mr. A. J. Bow reports on the Lower Seine gold mines, where the average value of 179 samples of ore was $10.31 gold quartz. Several properties and their possibilities are described.

PREVENTION OF GUN ACCIDENTS

Some Simple Rules by Which Hunters May Avoid Untimely Death.

Gunning accidents have become so frequent that it might be well to formulate a few rules for the guidance of those who go forth to slay. How would these do?

1. When you hand a loaded gun to your companion always keep the muzzle pointing your way. This may save the fool killer a job.

2. Never go hunting with a man who looks like a deer. Don't look like a deer yourself. A man in Pennsylvania was shot by a particular friend because the tuft of hair on his head resembled a partridge. When you go hunting have your head shaved.

3. Don't use a gun that will carry three or four miles. You may drop an innocent cow in the next county. Better stick to granddad's shotgun with the warped barrel. The children in a Wisconsin country school got a holiday on account of one of these long distance guns. Bullet crossed over two townships and hit the schoolma'am in the limb.

4. If you have any doubt that the deer you are going to shoot at may be your hunting companion don't yell, "Is that you, Pete?" before you fire. It might alarm the deer—if it is a deer.

5. If you really want to insure perfect safety against hunting accidents have your eyes, your nerve and your firearms thoroughly tested before you start out—and then stay at home.—Cleveland Plain Dealer.

Charley's Girl.

She sailed into the telegraph office rapped on the counter. The clerk remembered that she had been there about 10 minutes before as he came forward to meet her. He wondered what she wanted this time.

"Oh," she said, "let me have that telegram I wrote just now. I forgot something very important. I wanted to underscore the words 'perfectly lovely' in acknowledging the receipt of that bracelet. Will it cost anything extra?"

"No, ma'am," said the clerk, as he handed her the message.

The young lady drew two heavy lines beneath the words, and said:

"It's awfully good of you to let me do that. It will please Charley so much."

"Don't mention it," said the clerk. "If you would like it I will drop a few drops of nice violet extract on the telegram at the same rates."

"Oh, thank you, sir. You don't know how much I would appreciate it. I'm going to send all my telegrams through this office, you are so obliging."

And the smile she gave him would have done anyone good, with the possible exception of Charley.—Collier's Weekly.

An Obliging Artist.

Lady (sitting for protrait) — And make my mouth small, will you, ever so small? I know it is quite large, really, but make it quite tiny, will you?"

Artist (politely)—Certainly, m[illegible] If you perfer it I will leave [illegible] together.

According to the p[illegible] cultural college at [illegible] there is a great [illegible] garden [illegible] supp[illegible] legs [illegible] m[illegible] ho[illegible]

THIS ORIGINAL DOCUMENT IS IN VERY POOR CONDITION