The GATHERER
An Illustrated record of Invention Discovery & Science

Correspondents are requested, when applying to the Editor for the names and addresses of the persons from whom further particulars respecting the articles in THE GATHERER may be obtained, to forward a stamped and addressed envelope for reply, and in the case of inventors submitting specimens for notice, to prepay the carriage. The Editor cannot in any case guarantee absolute certainty of information, nor can he pledge himself to notice every article or work submitted.

THE RACE FOR THE POLE.

OF all the races ever run on this racy planet that which has the North Pole for its winning-post is surely the grandest, not only from its magnitude,

I think the methods of both Nansen & Andrée exceedingly perilous, and of doubtful utility. The chances of Nansen emerging out of the unknown North are very slim, but with a properly equipped balloon, and after sufficient experience with it during experimental flights. I think Mons Andrée might succeed in sailing across the Pole.

Yours &c,
H. M. Stanley

(From Mr. H. M. Stanley, M.P.)

but from its high motive, which is the love of science and the thirst for glory. We use the word "race" advisedly, because, as most of us know, the attempts now being made to reach the Pole by several nations are so spirited as to savour of contest, if not of formal competition. First, there is the intrepid and devoted Dr. Nansen, the young Norwegian who made his mark by crossing Greenland on snow-shoes for the first time. Nansen, with a dozen companions, has sailed in the little *Fram* to drift across the Polar area with the current which he believes to flow from Siberia towards Greenland. Perhaps at this very moment he is moving slowly in his ice-bound prison over the Polar area on his way to Smith Sound or the open sea to the eastward of Greenland. After him comes the brave Englishman, Mr. Jackson, of the expedition so munificently fitted out by Mr. Harmsworth. Mr. Jackson's plan is to approach the Pole by sap and mine, as it were—that is, by establishing depôts and shelters at intervals on the way, thus securing his retreat. The *Windward*, which took him out to Franz Josef Land, his starting point, is now at home, but will return to the Far North to bring him back. Thirdly, there is Herr Andrée, the well-known Swede, who is making ready to start from the north of Spitzbergen next summer in a balloon which is capable of being steered to some extent with the help of a sail and a guide rope trailing on the ice or sea. These three plans are all more or less novel and untried before. Short of a flying machine, it is not easy to see what other new methods could be tried, and the question of their relative merits adds greatly to the interest of the race on which the eyes of the civilised world are fixed. Which of these heroic men stands the best chance of reaching the Pole? It is a question which millions are asking themselves, whether they

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Yours truly
Clements R. Markham

(From Mr. Clements R. Markham, C.B., F.R.S.)

speak of it or not. To our mind, Andrée has most in his favour, and after him Nansen; but it is properly a question for experts, and, fortunately, several distinguished authorities have kindly given us their views of the matter.

Mr. H. M. Stanley, M.P., regards the methods of both Nansen and Andrée as "exceedingly perilous and of doubtful utility." The chances of Nansen "emerging out of the unknown north are very slim," he writes, "but with a properly

If balloons of a steerable sort had been more developed one could speak with some certainty on the matter. As it is it seems to say the least premature to launch out into regions whence return (for a party of necessity poorly equipped) is unlikely with a novel apparatus. Only pure luck can give success.

(*From Sir Martin Conway.*)

equipped balloon, and after sufficient experience with it during experimental flights, I think Mons. Andrée might succeed in sailing across the Pole."

Mr. Clements R. Markham, C.B., President of the Royal Geographical Society, who for the last thirty years has persistently advocated the exploration of the Polar area, has always deprecated mere attempts to reach the Pole as useless, excepting so far as they tend to the exploration of the intervening region. He has no sympathy with men who merely want to beat the record. "They are not geographers, and only do harm."

"Nansen," he continues, "is making an attempt contrary to all the canons of Arctic exploration. I shall rejoice if he succeeds, but as we know nothing of the region into which he has penetrated, it is impossible for us to form any conclusion of any value respecting the chances of success. If Andrée succeeds in filling his balloon on the northern shore of Spitzbergen, and starts with a fair wind which continues, he will, of course, pass over the Pole, and may descend there; but it is a most hazardous undertaking, and little good can be derived from it even."

Sir Martin Conway considers that no answer can be given to the strict question whether Nansen or Andrée is most likely to hit the particular spot called the North Pole. In either case "success would be a fluke. Nansen must reach a very high latitude (with any luck); the question is whether or not he will return. The balloon project seems to me theoretically good. If balloons of a steerable sort had been more developed, one could speak with some certainty on the matter. As it is, it seems to me, to say the least, premature to launch out into regions whence return (for a party of necessity poorly equipped) is unlikely with a novel apparatus. Only pure luck can give success. Nansen's apparatus (ship, etc.) is far from novel—the only novelty is in the course chosen. I think, therefore, that Nansen has *prima facie* the best chance of returning home, which, after all, is a more important element of success than merely reaching a point and being unable to return or record in any way the attainment."

Sir Leopold McClintock, the veteran Arctic explorer, has no opinion to offer on the question for a reason that is quite refreshing in these days when everybody is supposed to know all about everything. He has never even heard of Andrée!

Mr. Henry Coxwell, the veteran balloonist, would rather not express an opinion on the plan of Andrée, which he reminds us, and properly reminds us, reproduces in some points the scheme which he devised for Commander Cheyne, R.N., who originated the idea of employing the balloon in Arctic exploration some fifteen years ago. These plans were made public at the Mansion House before Sir Francis Wyatt Truscott, then Lord Mayor; Sir J. Puleston, Admiral Bedford Pim, and other scientific men and Arctic travellers, who knew that the Englishman, Commander Cheyne, would certainly have carried out his idea had he been supported by the English public. "Of course," says Mr. Coxwell, and not without cause, "foreign scientists can easily make a more favourable impression in Great Britain than true Britons themselves." How little have we heard of Commander Cheyne and how much of Major Andrée! Mr. Coxwell thinks that his "own design which Cheyne was ready to adopt would have succeeded quite as well as trying to cross the Arctic circle, and trying, moreover, to keep a balloon up for a month—a feat as to duration which has never yet been accomplished. Nor, indeed, has it been done for a third of that time, or a fourth, if figures and facts are to be relied on. However, the latest aspirants doubtless know more than I do as to their intentions."

Mr. Harmsworth, whose very interesting remarks we have kept to the last because they will fitly round off the discussion, has written to us as follows:—

"It is not wise to prophesy unless one knows, but I regard Mr. Andrée's expedition very much as one looks upon the gentlemen who a few years ago filled the American newspapers with

I regret to say that I have never even heard of Andrée's Expedition towards the North Pole, therefore you will see that it is not in my power to express any opinion, as to which of the two Expeditions Nansen's or Andrée's, has the best chance of reaching the North Pole

very faithfully yours

F. Leopold McClintock

(*From Admiral Sir F. Leopold McClintock, K.C.B.*)

Commander Cheyne R.N. was the originator of the idea and would certainly have carried it out. had his proposed Expedition been supported by the English Public -

of course foreign Scientists can easily make a more favourable impression in Great Britain than than true Britons themselves -

(*From Mr. Henry Coxwell.*)

accounts of their proposed balloon journey across the Atlantic. Nevertheless, it should not be forgotten that Mr. Andrée is a skilled aeronaut, and there are hundreds, nay, thousands, of people who regard a balloon as the only means of attaining the Pole. Mr. Jackson went into the question of balloons very carefully, and he came to a conclusion expressed in the following words :—'I should be inclined to take balloons with me could I be convinced that they were manageable in England. If it be not possible to direct a balloon with certainty in England, it is obviously much more impossible in latitudes where storms are of almost daily occurrence, and where the ordinary appliances for repairing and filling a balloon are unobtainable.' In reading Mr. Jackson's account of his last winter's experiences, in the comfortable home his party took with them to Franz Josef Land, one is struck by the fact that storms seem to have been of almost hourly occurrence. In the summer, too, up to the time of the sailing of the ship, that is to say, there was no ballooning weather. . . . I am inclined to believe that the result of Dr. Nansen's expedition is more likely to prove of value to science than that of Mr. Andrée. In this matter, again, I am largely guided by the opinions of Mr. Jackson, who, as a personal friend of Dr. Nansen, is better acquainted with his views than most of us. The probabilities are all against Nansen, Andrée, or Jackson reaching the Pole, but they are in favour of the first two, at any rate, attaining a high latitude and of making and bringing back an abundance of scientific information. . . . Next year will be most interesting and exciting in the Polar area, and one looks with hope to the result of such work that has for its aim the progress of science, and is untarnished by any of the sordid considerations which tinge modern thought in regard to man and his life's work."

A Rubber-Yielding Vine.

A creeper, or vine, known in Jamaica as the "milk withe" from its white sap, has been found by botanists to yield a good quality of indiarubber. This climber is the *Forsteronia floribunda*, and grows as thick as a man's wrist. Like ivy it reaches to the tops of the highest trees and rocks. The milky juice coagulates on exposure to the air, like that of the indiarubber tree.

A Gigantic Dragon-fly.

M. Brogmart, a French geologist, has discovered a number of fossil dragon-flies in the coal-mines of Commentry, in the Department of Allier, France. The largest of these, which he names the Meganeura monyi, is very like the common slender dragon-fly of our ponds, but is twenty-seven inches across the wings and large in proportion. The head is big and armed with strong teeth, and the insect appears to have fed on small fish as well as other insects and larvæ.

An Automatic Loom.

An American inventor has introduced a cotton loom which is practically automatic in its action and only requires to be fed with bobbins. The cloth is said to be of superior quality and the output much greater than that of the ordinary cotton-looms employed in the United States.

Washing Dishes by Electricity.

At a recent exhibition of utensils in the Palais de l'Industrie, in Paris, a large number of domestic

WASHING DISHES BY ELECTRICITY.

appliances worked by electricity were shown in action, but perhaps the most novel was a dish-cleaner, which we illustrate herewith. The plates travel between pairs of wet brushes, and after being thoroughly cleaned in this way fall into a tank of water, from which they are removed. The brushes are revolved by means of the belt and pulley, P, which derive their motion from a small electric motor, M, and 2,000 plates can be washed per hour in this way.

An Historic Room.

The accompanying illustration, which was too late for inclusion in the article on Lord Salisbury's homes in this number, shows the brass tablet at Walmer Castle, which the late Mr. W. H. Smith placed on the wall of what was once the historic chamber in which Pitt received Lord Nelson, but is now part of the drawing-room at the Castle. The illustration on page 202 shows the position of the interesting tablet, which is here given in detail.

Lighthouse Weather Warnings.

The connection of so many of our lightships and lighthouses by telegraph with the rest of the country has led the meteorological office to issue storm warnings to twenty-five of the principal lighthouses, thus enabling them to warn passing vessels of the approach of rough weather.

A Parachute Ball.

A new playing-ball of a scientific character has found much favour with French children, and sooner or later will probably find its way across the Channel. Our engravings show the toy, which consists of a stout silk parachute, as shown in the middle figure. It is folded into an india-rubber star (seen at *b* in Fig. 2), and bound up as at *a*. The child by a whirling motion launches the ball thus formed into the air, and the fastening, which is elastic, comes loose, allowing the parachute to expand, as in our first picture. Some adroitness is required in the use of the ball, but this is an advantage, because in trying to excel in the management of it the boy or girl is cultivating the physical powers.

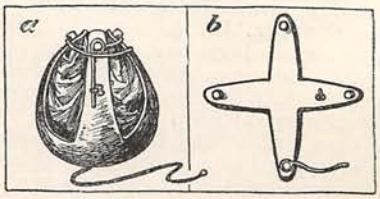
A PARACHUTE BALL.—FIG. 1.

Pasteurising Milk.

The importance of sterilising milk in order to kill the germs of fatal diseases is so great that we again draw the attention of our readers to the subject. Pasteur's method of sterilising is admittedly the best, inasmuch as it kills the deadly germs of scarlatina, consumption, diphtheria, and so on, without altering or "killing" the milk itself. It consists in heating the milk to a temperature of 75 degrees Centigrade (167 degrees Fahrenheit), and then preserving it in hermetically sealed vessels. A neat apparatus for the purpose is "Le Tutelaire," recently brought out in Paris as an improvement on that already given in THE GATHERER.

Short-Sightedness.

Professor Sterling Ryerson, of Trinity Medical College, Toronto, has become convinced that



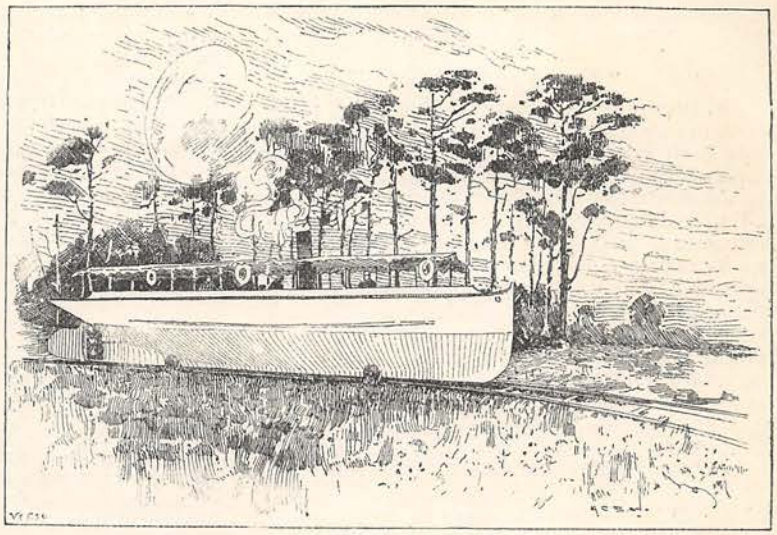
A PARACHUTE BALL.—FIG. 2.

myopy, or shortness of sight, is generally caused by abuse of the eyes, and has drawn up the following prohibitions for all who wish to avoid the evil as well as those who already suffer from it:—Don't read in railway trains or vehicles in motion. Don't read lying down or in a constrained position. Don't read by firelight, moonlight, or twilight. Don't read by a flickering gas or candle light. Don't read books printed on thin paper. Don't read books which have no space between the lines. Don't read for more than fifty minutes without stopping, whether the eyes are tired or not. Don't hold the reading close to the eyes. Don't study at night, but in the morning when you are fresh. Don't select your own glasses at the outset. As a general rule, whatever tends to strain the eyes and increase the quantity of blood in them favours the defect, and in extreme cases leads to detachment of the retina and blindness.

The Barisal Guns.

In the delta of the Ganges a mysterious sound is sometimes heard to which the name of "Barisal Guns" is given, because of its resemblance to the dull report of distant artillery. Similar noises are well-known to the lighthouse-keepers and fishermen of Ostend and Boulogne, who call them the "mist pouffers," or fog dissipators, and generally hear them on the evening of a hot day in summer. Although the sounds are compared to the detonations of guns they are not very like these, and they occur at irregular intervals. Their origin

is enveloped in mystery, but some physicists regard them as electrical detonations, such as might be produced by flashes of ordinary lightning or the explosion of globe lightning, whilst others refer them to the shocks of fluid matter in the bowels of the earth, or the rumbling of slight earthquakes.



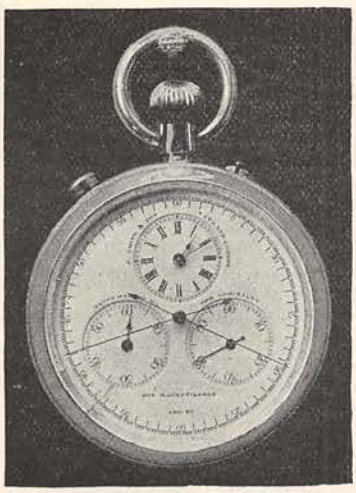
AN AMPHIBIOUS FERRY-BOAT.

A Useful Watch.

The "split-seconds" chronograph timekeeper which we illustrate will prove exceedingly useful to cyclists, engineers, electricians, and many others. It is proof against magnetism, and may therefore be carried on electric railways or into dynamo stations without fear of damage to the works. In fact, all the parts made of steel in ordinary watches are replaced in it by an alloy of palladium, and it has gained the Kew certificate of the highest class.

An Amphibious Ferry-Boat.

Denmark is a country of land and sea, and the ingenious natives have provided themselves not only



A USEFUL WATCH.

with steamers which take entire trains on board, but with boats which travel from one water to another on rails. In the island of Seeland, for example, the screw steamboat which we illustrate plies on three lakes; the Lyngby, Fur, and Farum, and passes from one to the other over the intervening land. For this purpose it is fitted with four wheels, which are actuated by a simple gearing from the screw, and enable it to run along the railways provided for it.

A Pocket Phonograph.

A portable phonograph was recently described in THE GATHERER, and we have now to mention the production of one which is still smaller and capable of being carried in the pocket. It is a perfect little instrument of the usual sort, but made so small as only to occupy a space six inches long by three broad, and two inches high. The wax cylinders are turned by clockwork, and the instrument resembles a musical-box, and can be used as such as well as for correspondence.

Fossil Frost-Cracks.

The footprints of primeval animals, the pits made by rain, and the ribs of sand produced by the wind, have long been recognised in ancient rocks by geologists, and now Mr. J. A. Udden, an American, has identified a series of arborescent cracks in the shales and sandstones of the Beach Hills, South Dakota, as due to the frosts of the Chalk and Jurassic periods in the past history of the earth. The tree-like patterns of these cracks, which branch at angles of 60 degrees or 120 degrees, are unmistakable, and quite different from the jagged woven cracks due to the heat of the sun.

The Nile of the North.

Such is the name given to a new river which has been discovered in Labrador by Dr. Bell of the Canadian Geological Survey. It is much larger than the Ottawa River, and takes its rise in three sources, one at Three Rivers, another in the Lake St. John district, and a third near Lake Mistassini. After a course of 500 miles through a rich loamy plain covered with forests, it falls into St. James Bay, the southern end of Hudson's Bay. Rapids

nears its mouth are a bar to navigation at present, but the surrounding district is quite fit for agriculture.

"Phrase and Fable."

Dr. Brewer's "Dictionary of Phrase and Fable" is an old friend to many of our readers, but it has just been reissued by Messrs. Cassell in a new form which ought to compel all who knew it before to substitute the new edition for the old one, and all who do not possess this invaluable book of reference to procure it. The new volume contains no fewer than 1,440 pages of well printed, carefully arranged references to all such points as the ordinary dictionaries pass by, though the average reader is frequently puzzled by them. The "Bibliographical Appendix" is a very useful feature of this acceptable library companion.

AMONGST FLOWERS, BEES, AND POULTRY.

FEBRUARY is a hopeful month—we look forward to the advent of Spring, its flowers and its softer winds. The Snowdrops are peeping above the brown earth, and in quite wintry weather something will show that the departure of cold and discomfort is approaching. How pretty the winter Aconite looks with its bright yellow flowers in their quaint collar of green leaves; and how few plant it, though as rich in colour as almost any bulb, and amongst the first to expand to the weak sunshine.

If vacant ground has not been dug up, and the weather is not severe, let this important work be accomplished at once. Marl and burnt clay will greatly improve light soils, and mix with heavy ground such materials as cinder ashes, brick-rubbish, and lime; particularly the last-mentioned, which is also valuable for incorporating with rich garden-soils. Plant hardy perennial and Alpine plants. Phloxes, perennial Sunflowers, Lupines, Day Lilies (Hemerocallis), and Erigerons are the most satisfactory, as they never fail to blossom well. This is, of course, a small selection, but it would require a chapter to deal carefully with the subject. Plant climbers, Roses, and make new walks.

Sowings of Peas should be made now. First and Best, American Wonder, and Ringleader are three good kinds, or one can have such old favourites as Alpha. Sow Mustard and Cress in boxes, and a small sowing may be made of the Queen Onion, early Heartwell Cabbage, early Turnips, round-leaved Spinach.

This is a good month, for those who do not wish to grow exceptionally large exhibition blooms, to put in Chrysanthemum cuttings. Select stubby shoots with a "heel" attached—that is, with a few little roots if possible. Dibble them in fairly close together round the sides of 48 or 5-inch pots, filled with loamy soil, similar to what one would use for Geraniums, and place in a greenhouse, or frame, where gentle heat can be given. They will soon root and be ready for potting off. Always remember that the Chrysanthemum will not tolerate much artificial warmth, and that only at the start. It is a plant naturally hardy, and more injured by fire-heat than any other florist's flower.

With the increasing warmth of the sun's rays plants will need more water, but, of course, only when fairly dry. A very good test as to whether a plant requires water or no is to rap the pot with the knuckles. If a clear ringing sound is given out, water is needful; if dull and heavy, then the soil is sufficiently moist.

As the weather is often as severe now as at any time during the winter, my only advice in respect to Bees and Poultry is to follow the information given last month. March will bring, however, more labour amongst these, and our future notes will be fuller in these departments.

OUR PRIZE COMPETITIONS.

PARTICULARS of the first series of new Competitions for 1896 were given on page 76 of our December issue, in which Prizes were offered for the best- and second-best Serial Stories of 40,000 words—for the best summaries of "A Missing Witness," when this story is completed—for the best Snap-Shot Photographs of out-door scenes—and for the best-worked hemmed linen handkerchiefs. The Rules and Regulations were set out fully in the December number, together with the respective dates when the work is to be sent in. For the convenience of our readers, however, we append here a short note of the dates:—

PRIZE STORY OF 40,000 WORDS (£50 and £30—due June 1st, 1896).

SUMMARY OF SERIAL STORY (£1 1s. and 10s. 6d.—due July 30th, 1896).

SNAP-SHOT PHOTOGRAPHS (£5 and £3—due May 15th, 1896).

HEMMED HANDKERCHIEFS (£1 1s. and 10s. 6d.—due February 17th, 1896).

"OPINION" COMPETITION—No. 1.

The large number of entries for the "Opinion" Competitions, announced by the proprietors of CASSELL'S MAGAZINE in a leaflet inserted in the December issue, makes it impossible to announce this month the awards in all three Competitions. In Competition No. 1, for the selection of the eight most generally popular items in the December number

The First Prize of Twenty Pounds is divided between—

WALTER CLAYTON, Wolverhampton, and
J. BOSS, Lupus Street, S.W.,

whose selections were adjudged equal in merit.

The Second Prize of Five Pounds is awarded to (Mrs.) M. A. GUTHRIE, Nottingham.

The Third Prize of Three Pounds to W. H. THOMAS, Dartmouth Park Road, N.W.

The Fourth Prize of Two Pounds to A. RYRIE, Glasgow.

The Fifth Prize of One Pound to S. H. BRIANT, Uxbridge.

The Awards in "Opinion" Competitions Nos. 2 and 3 will be announced in our next number, if possible.