CONVERTS IN CHINA.

The Commander of the Monocacy Convinced That We Should Not Scoff.

RESULTS ARE IN SIGHT.

The Layman and Atheist Forced to Concede an Improvement.

IMPORTANT MATERIAL BENEFITS.

Missionaries in Palace Cars Living in Occidental Luxury

IS THE COMMON SENSE PROPAGANDA

It is probable that few people in the United States, no matter how much they may have read, can realize the enormous extent of the Chinese Empire, the density of its population along the coast and river banks, and the fact that the Yangisi is a huge artery running from west to east, directly through the heart of the country, and supporting millions upon millions of human beings by its traffic and the agriculture of its rich valley. The width of the valley is so great that, for hundreds of miles from its mouth, the circumscribing hills and mountains can only be seen in dim outline, the whole lowland being one vast, rich, level plain, without a pebble as large as an egg to hinder cultivation in all directions, and with the most primitive of implements.

The River Changes Its Course.

Through the broad valley the mighty river plows its way, utterly lawless as to direction, curving here and there for a number of years, and then, without warning or apparent reason, gradually eating away its own boundaries, and, in the course of a few vears, cutting another channel miles away from its former track. The patient farmers sow and reap year after year, now on the left bank, now on an island, and again on the left bank, utterly regardless apparently of the stream in some parts, and yet ever watchful of it in others, as is evidenced by the huge dykes that are occasionally seen on one side or the other for miles in extent. The reliow, turbid stream has a velocity of from two to four miles an hour, according to the season of the year, and a difference, at Hankow, 600 miles from the sea, of 50 to feet between the summer and winter

It is up this great channel, through the very vitals of the Flowery Kingdom, that Western enterprise has pushed its way, persuading the Celestials, much against their will, to open port after port to forwithin the year, Chung-King has been opened, nearly 1,500 miles from the sea. American Progress in China.

Think of it-think of opening a port at Omaha, supposing there were a river from Omaha to New York, and the Chinese be granted a concession on which to live and trade and a nucleus for the propagation of hism or Confucianism! To be sure the cases are not parallel, but in point of distance and some other things they are similar. Between Shanghai, near the mouth of the river, and Chung-King there are now five treaty ports: Chin-kiang, 160 miles; Wuhn, 250; Kinkiang, 450; Hankow, 600, and Ichang, 1,000 miles. Of these Hankow is the most important, as it is the principal tea shipping port to England and Russia.

American traders, however, are not nearly

numerous as formerly, and the failure of Russell & Co. has put an end to the last great American firm. The trade itself, except in kerosene, cottons and ginseng, is not important. Our principal and increasing interest is in missionaries, and this brings us to the subject which has brought the Monocacy to Hankow, viz., the attitude of the Chinese toward foreigners on the

Yangtsi. The Progress Is Unmistakab'e.

When I was in China last (some 14 years ago) I was struck, in common with almost everyone else who was not a missionary, with the meagerness of the results attained in proportion to the outlay, and the appaimpossibility of their ever materially influencing so vast a body of people who al-ready had three systems of religion and philosophy which ante-dated the Christian faith by thousands of years. Now I find many of the oldest lay foreigners, men whom I had known before, recognizing the fact that an impression is being made, which, independently of its benefit in point of spiritual influence, is undoubted as regards the promulgation of Western civiliza-

It is this which is permeating the inert mass of humanity, which has, in the main, so long lain dormant under the paralyzing in-fluence of a superstitious belief in mundane spirits, fairies, hobgoblins, evil eyes and the like. Many missionaries, too, have changed their method of teaching, accord-ing to their experience, so that at present it may be said that there is no system which some one or other of the societies is not trying. Some societies still believe in itinerant preaching, and, while having supply stations in the treaty ports, they send foreign missionaries, both male and female, dressed in Chinese clothes, into all the provinces for hundreds of miles from the

Not Unlike Salvation Army Methods.

These propagandists live in the native inns, and whenever an opportunity offers at gatherings and street corners they preach be gospel after the manner of the Disciples. An advantage of this method is that any caliber of intellect can be employed, combined with faith and enthusiasm, and the lowest classes of people are reached, thus perpetuating the method by which Christignity was orginally developed in Europe, viz: from the bottom upward.

Other societies believe that though the ilinerant method is useful in preparing the way, the itinerants themselves do not reap the fruits of their labors; accordingly these societies establish themselves in the treaty ports, buy land both in and out of the foreign concessions, build churches, schools, hospitals and comfortable dwellings for their ministers and doctors, with their wives and children; teach the Chinese children almost everything that is taught in the public schools at home, as well as the trades, patiently instil the fact that their own example as to home and tamily is the type to be followed, and, having educated the children in Chtistian faith, send them out as native preachers into the provinces.

The Charge of Immorality. An advantage of this system is that the example of domestic life afforded by the example of domestic life afforded by the missionaries themselves retutes one of the most frequent arguments to be found in Chinese writings against the missionaries, viz.; immorality. Some of these societies have abandoned the teaching of English, finding that much valuable time was lost which might have been devoted to the sciences, and also that, English taught converts were liable to leave the fold and go into business before their education was complete.

Some societies have found the lowest elass of Chinese utterly unteachable as well as

the highest, and find their most successful field among the grent middle class, merchants, farmers, etc. Other societies have found in the upper class—the scholars—the best teachers for native work in the provpest teachers for native work in the prov-nces, and as it is the scholar class which is the most powerful enemy of Christianity, they thus carry the war directly into the enemy's country in more senses than one. Meantime, while all the systems are being tried, the number of missionaries is perpetually increasing; even Quakers are coming out and funds are continually nouring in to out and funds are continually pouring in to carry on the work. More money was de-voted to China missions alone this last year, both Catholic and Protestant, than was ever before appropriated in any year for all the toreign missions combined.

The Power of Present Methods. Fourteen years ago I thought that China was a country where even the continued dripping of the water of Christianity would never wear away the stone of heathenism, but now that the water is applied with a steam fire engine and the principle of hy-draulic mining is introduced, it is apparent to my unprejudiced mind that the stone will ultimately be forced bodily from its

Of all the missions, the Roman Catholic is first in point of importance and efficacy. It is the longest established, it has the best It is the longest established, it has the best organization, and its teachings are the readical conformal and the location of its posts, appears as if it had been systematically peppered over. The objections to it on the part of the conformal and the location of its posts, appears as if it had been systematically peppered over. The objections to it on the part of the conformal and the location of its posts, appears as if it had been systematically peppered over. The objections to it on the part of the conformal and the location of its posts, appears as if it had been systematically peppered over. The objections to it on the part of the conformal and the location of its posts, appears as if it had been systematically peppered over. The objections to it on the post of absorption. A map of China, showing the location of its posts, appears as if it had been systematic ent aspect of the situation from the point of view of a naval officer detailed for the work.

both Germany and Italy are their own their right to take charge of their own missions. England has the greatest interest in missions, and the United States

comes next. Probably a Million Converts.

There are now over a thousand foreign Protestant missio naries scattered through China. Probably the number of converts of all kinds is in the neighborhood of 1,000,000. This is only about one-quarter of I per cent of the population, but the question of the number, genuine or claimed, is not of much importance as bearing upon the present sit-

It is doubtful if a genuine Chines It is doubtful if a genuine Chinese Christian with a longing for immortality will be produced in China for very many years. The Chinese as a race care nothing for the hereafter except perhaps to haunt their enemies in a spiritual form. In the lower classes, especially, owing to generations of servitude, human life is so cheap that there is almost an entire loss of individualities. dividuality; the man himself sets the same small value on his life that his rulers do hence is presented the extraordinary anomaly of a mass of human beings, who, though timid, have no fear of suicide, and who will not help each other when drowning or exposed to other danger. They do care for the comforts of this life, however, while they are in it, and the inevitable re-sult of Christian teaching is to show that life is worth living, which is undoubtedly the first step toward the achievement of the Western form of civilization; the desire for immortality will come in due time.

Fystem About the Rlots. It is the leaven of Western civilization the immediate cause being the publication of inflammatory documents against Chris-tianity in the province of Hu-nan, which have been circulated in all the other Yangtsi provinces, combined with the movement up and down the river of designing characters belonging to the Kalon-hui and other societies composed of discharged and pensionless soldiers unemployed since the Taiping rebellion. These have stirred up the people, trusting to the local vaga-bonds and beggars (of which there are a great number in China) to apply the torch for the sake of loot. A translation of one of these documents, entitled, "The devil doctrine ought to be killed," fell into my hands recently. It is full of false charges of immoral practices and indefensible do

The riots have occurred in the following order: Wuhu, May 12; Nanking, May 25; Wusueh, June 5; Ichaug, September 2. It seems fairly evident that it was a concerted scheme, and the Yangtsi ports were probably chosen because of the great mass of discontented junk population whose business has been sadly curtailed during the last dozen years by the introduction of steam navigation. Of course, it is the old battle of hard labor and machinery which has been long ago fought out at home, but here it comes particularly hard on those who are oussed as other walks in life are already filled to overflowing. The Chinese ready filled to overflowing. The Chinese Government itself owns the principal line of steamers, but it is not probable that this fact has any bearing on the situation.

Competition in Business.

The Chinese expect to drive foreign commercial people out of the country by sheer business competition, and they are in a fair way to succeed, but the missionaries can-not be reached in that way; their societies are now established institutions in Europe are now established institutions in Europe and America; they are well organized on business principles, with paid officials, and are backed up by the great body of staid, substantial citizens in all countries. The societies handle large amounts of money and have extensive dealings with other great business corporations, and obtain special rates on railways, steamers, etc. The spectacle of the heathen Chinee being pursued by the missionary and his family in a parlor car is rather startling at first sight, but analysis shows that it corfamily in a parlor car is rather startling at first sight, but analysis shows that it corresponds with the spirit of the age, and is doubtless economical, and certainly anyone who is willing to live in this country and devote the greater part of his life to the teaching of Christianity deserves to be well cared for while here. All this without noting the undoubted benefit that they are conferring upon the people from the standconferring upon the people from the stand-point of Western civilization.

The Government Policy as to Foreigners The exact amount of responsibility of the general Government in the riots is difficult to determine. There are clauses in the treaties binding the Government to protect foreigners, and particularly missionaries in the peaceful pursuit of their vocation, but the peaceful pursuit of their vocation, but could China have realized 50 years ago the condition of affairs that exists now, the missionary clause would probably have never been admitted. It must have been admitted, even then, only because China, as a whole, is pautheistic and could see no objection to adding Christianity to Confucianism, Taoism, Buddhism and Mohammedanism, which already avieted. ism, which already existed. Probably the difficulty is not really with the religion, but

with the powerful elements of Western civilization which accompany it. China is composed of a large number of provinces, or States, over which the general Government has little real authority. It controls the officials, and can degrade them controls the officials, and can degrade them or take off their heads as occasion requires, but the people themselves are only controlled because they are like large flocks of sneep, peaceful and timid, willing to submit to oppressive taxes for the sake of peace; but if they are oppressed too much or other occasion arises, they are feared because of their enormous numbers. A mobot such people is cowardly and ernal

of such people is cowardly and cruel. Difficulty in Suppressing a Riot.

Moreover (and here is a serious difficulty when it comes to suppressing a riot) it is against the theory of the Chinese form of against the theory of the Chinese form of paternal government to shed the blood of the people, they being the children of the Emperor. Hence the Taotai, or Mandarin, who orders the soldiers to fire on the people is in more danger of being degraded than the one who does not order his soldiers to fire, but does allow property to be de-stroyed. It is allowable to shed blood in defense of life, but not in defense of prop-

erty.

There is no such a thing as patriotism, as we understand it, in China. People of one district take no interest in their neighbors;

lower social status than scholars, good ones

The protection of missionaries by foreign gunboats seems to be essential for years to come on the Yangts; not the actual firing upon mobs, but the presence of a gunboat at each of the river ports where missionaries reside.

Necessity of the Gunbouts.

When there is no such a thing as public opinion or liberal education, only the most vigilant authorities can repress sudden tumults which often arise from the most childish causes, and the foreigners here will never feel safe unless a tangible protection and shelter is at hand. When the riots broke out last summer there was not a foreign gunboat in the whole length of the river. But even gun-boats do not meet the entire situation. The foreign concessions in the treaty ports are directly on the river front, are laid out in broad parallel streets, are walled in and can easily be defended, but the missionaries can easily be defended, but the missionaries do not confine themselves to these quarters, and perhaps they cannot do so; they wan-der all over the country, and the Chinese authorities allow them to buy property miles away from the concessions, where nothing but a flying machine could protect

them.

No sooner is a treaty port opened than they flock to it, regardless of its exposure, and form at once an outpost from which to throw forward their advance parties still further into the country. Chunking, for example, is already full of missionaries; it is 400 miles above Ichang, as already stated, and has never yet been reached by a steamer. To do so the vessel must probably draw not more than four feet of water, and have most powerful machinery. At present it is powerful machinery. At present it is reached by junks which are warped up, against a five to eight-knot current, by a line from shore, like a canal boat, man power being used.

Fountain of Pernicious Literature.

European natives hesitate about bringing a combined pressure upon the General Government because of the late riots, and no wonder, for none can tell if it is not the case of the sick man in Europe over again. A demand, however, for the opening of the port of Chang-sha, the capital of Hunan, and the fountain-head of the pernicious anti-Christian literature, would, in the opinion of naval officers on the river, be an effectual check to this sort of trouble at least, and would sprobably tranquilize the whole upper river.

Chang-sha can easily be reached by gunboata. It lies on a river which runs into Tung Ting Lake, a body of water about 60 miles long by 30 miles wide, and the lake connects with the Yangtsi about 120 miles above Hankow. Meantime the Chinese

above Hankow. Meantime the Chinese Government appears to be exerting itself, and much is slowly being accomplished in another way; the Viceroy of the Province another way; the vicercy of the Provinces of Hunan and Hu-pe, who is an avowed foreigner-hater, has put up within the lastyear, at Wuchang, opposite Hankow, a cotton factory and an iron foundry. He has
contracted for a railroad for opening up
coal mines, and has introduced mathematics
into the otherwise unpractical curriculum into the otherwise unpractical curriculum of the Confucian scholars, much to their per-

plexity and dismay. The Monocacy Is All Right.

And now a last word as to the United States steamer Monocacy, which I have the honor to command. This steamer has been so systematically abused by the press at home as a miserable, worthless, useless old wooden hulk, that it is high time the public were differently informed. She is a powerful, side-wheel, iron river steamer, intended for this kind of work, and nothing else. She is 25 years old, and not fit to go to sea; but she is fit for river work for certainly six years longer, and probably ten years. She is recognized by all naval officers of all nations who have seen her as being the best vessel on the river. Her battery is composed of four 8-inch smooth bores and two 60-pounder rifles, with six Hotekiss revolving cannon. rifies, with six Hotekiss revolving cannon. It is a heavier battery than is carried by any other vessel in the world on the same draught, viz: 9 feet aft and 8 feet forward. It is also a more efficient battery than any other on the river. Smooth bores do much greater execution against mud and soft brick walls than rifies. With this draft of water the Monorecovery of the Hankow at water the Monocacy can go to Hankow at all seasons of the year and to Ichang during five months of the year. No other vessel in

Right Boat in the Right Place.

The vessel carries a fair-sized crew, but could easily carry more. She carries an excellent apparatus for condensing a large quantity of water daily, and an abundant quantity of water daily, and an abundant supply of tanks for preserving it (a most vital feature in this cholera climate). She is perfectly accessible in all parts, and is consequently the healthiest ship on the river. An increase of the marine guard to 36 men, for an additional landing party, and an electric search-light, which terrifies the Chinese, is all she needs to enable me to protect the foreigners of any two ports on the river at once with more efficiency than any two vessels now here could do it. It is possible that if it is found that the Chinese Government cannot protect foreign lives and property, the European nations will seize territory along the river. It will never be the policy of the United States to do this, but its increasing interests here deserve more efficient naval protection than do this, but its increasing interests here de-serve more efficient naval protection than they now receive. There should be another vessel somewhat similar to the Monocacy, but of lighter draught, in addition to her, or else three gunboats carrying 50 or 60 men each with a heavy gun, and a powerful second-ary battery of rapid-fire and machine guns. F. M. BARBER,

Commander United States Steamship Mon-

SOMETHING NEW IN GLASS.

Skylights Made With a Metal Netting fo a Base Are Very Strong.

Under the name of wire-glass, a new in rention has been brought on the market by a Dresden firm which marks an important development in the glass making industry. The process of manufacture consists in furnishing glass in a hot plastic condition with a flexible metallic layer, iron wire netting, for instance, which is completely enclosed by the vitreous substance, and effectively protected against exterior influences, as rust, etc. The new glass, which has been patented in the leading countries, possesses much greater resisting power than the ordi-nary metal, and is, it is claimed, indifferent

nary metal, and is, it is claimed, indifferent to the most abrupt changes of temperature, and will even withstand open fire.

A further proof of its toughness and durability is stated to be the fact that it may, in a highly-heated state, be sprinkled with cold water without being materially damaged. The glass is specially adapted for skylights, the powerful resisting qualities of the material enabling the usual wire protectors to be dispensed with. As wire-glass cannot be cut by the diamond, except under the application of great force, and cannot be broken without creating considerable noise, the substance is claimed to be, in a measure, burglar proof. measure, burglar proof.

A GUN TO THROW VITRIOL,

fideous Method of Warfare Proposed Subjugate the Negroes.

Several Paris papers announce that a dis-tinguished officer of the French army, Com-mandant Mattei, has just invented and sub-mitted to the Minister of War a new kind of rifle so contrived as to project at a distance of 70 metres a powerful spray of vitriol. It is added that it is not to supersede the Lebel rifle, nor to be used in European warfare, but only against savages and negroes, on whose naked bodies the corroding

SOUND IN THE WIND.

Professor John Tyndall Explains Why You Don't Hear a Noise

WHEN A GALE BLOWS AGAINST IT.

The Air Current Deflects the Waves So

They Go Over Your Head. ELECTRIC LIGHT ABSORBED BY FOG

(WRITTEN POR THE DISPATCH.) It is everyone's experience that a sound can be heard better with the wind than against it. It is common to say that "the wind blows away the sound," but from experiments I made while scientific adviser the Elder Brethren of the Trinity House.

the Board of Trade and the Board of Irish

Lights, I know that the sound is not blown

away, but only deflected so it does not reach the ear. In the year 1873, after my return from the United States, an elaborate investigation on fog signals was begun at the South Foreand. For several weeks we operated with trumpets, whistles and guns; but on October an instrument was introduced which has continued to play an important part in fog signaling ever since, a steam siren, invented and patented by Mr. Brown (or Braun), of

New York. The following is a brief description of the

rection. But let us suppose a wind to blow in opposition to the direction of the sound.

How a Sound Wave Is Deflected, Close to the earth's surface the wind's motion is retarded by friction; and, as the air is to some extent viscous, its successive layers, proceeding upward, will be retarded in their motion over the lower ones. In brief, the wind at a height above the earth's brief, the wind at a height above the earth's surface will move more rapidly than close to the surface. Consider, then, the case of a soundwave, that in calm weather would remain perfectly vertical, passing through air thus in motion. It is obvious that the wave cannot continue vertical. As a whole it will be pushed back by the wind, but because of the quicker motion of the upper air, it will be pushed further back above than below. The wave would be thus thrown into a leaning attitude (if I may use the term), its upper portion inclining toward the source of the sound.

Bearing in mind, then, that the wave moves in a direction perpendicular to its front, and bearing in mind that the perpendicular to that front points obliquely upward, the wave will follow this obliquely upward, the wave will follow this obliqueldirection. It will pursue its way through the

rection. It will pursue its way through the upper air, eluding observers upon the earth's surface. The sound is thus deflected, earth's surface. The sound is thus deflected, not blown away, by the wind. The credit of verifying this theory is due to Prof. Osborne Reynolds. I have myself made many experiments on this subject, and verified the results of Prof. Reynolds. By means of a ladder planted on Wimbledon Common I was enabled to raise my head to a height of 12 feet above the ground.

The Theory Conclusively Established The hammer of the bell that I employed was adjusted by a spring, so that the stroke should always have the same value. Carrying the bell along the ground to windward, a point was at length attained at which an The following is a brief description of the apparatus: "A boiler had its steam raised to a pressure of 70 pounds to the square inch. On opening a suitable aperture this ered, the sound becoming distinctly audible.

The same thing was observed with the powerful siren I have described, and the fact is one of vital importance in fog signalling. A wind may deflect the sound so a

vessel near at hand may not hear it.

A great deal has been said about the loss of the Eider so near the powerful electric light at St. Catharine's Point, described as "the most intensely brilliant light in existence, and one which the country as a maritime pattern which feel products."

time nation might feel proud to see upon its shores." Contrasting the new luminary with its predecessor, the latter was described as an oil lamp of six concentric wicks with a power of 730; while the new illuminant sent forth an almost solar blaze of 7,000,000 conditions.

illuminant sent forth an almost solar blaze of 7,000,000 candles. My own hopes and enthusiasms regarding the electric light have been sobered down by experience. I knew from the first that it possessed constituents more liable to be ruined by haze and fog than those of either oil light or gaslight. It is, indeed, the very waves which confer upon the electric light its peculiar whiteness and brilliancy in clear weather that are most useless in thick weather, these being the first destroyed by minute sus-

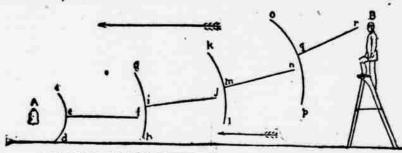


DIAGRAM SHOWING DEFLECTION OF SOUND WAVE BY WIND.

A, the bell; B, the listener; arrows indicate direction and velocity of the wind; c-d, front of sound wave at e; e-f, direction of sound wave from e; g-h, front of sound wave deflected by wind at i; i-j, direction of sound from i; k-l, tront of sound wave further deflected by wind at m; n-n, direction of sound wave from m; o-p, front of sound wave still more deflected by wind at q; q-r, direction of sound wave from q—the sound now reaching listener on ladder.

steam would issue forcibly in a continuous stream, and the sole function of the siren was to break up this stream into a series of strong puffs. This was done by causing a disc with 12 radial slits, placed in the throat of a great trumpet, to rotate behind a fixed disc with the same number of slits.

"When the slits of both discs coincided s puff escaped; when they did not coincide the steam was cut off. Each puff of steam at this high pressure generated a sonorous wave of great intensity, and the successive waves followed each other with such rapidity that they linked themselves together to a musical sound so loud as to be best described as a continuous explosion."

With regard to the instruments employed, a uniform superiority could not be con ceded to anyone of them. Charged with proper powder, the gun is a first-class signal. Still our observations were so numer ous and long-continued as to enable us to come to the sure conclusion that, on the whole, the steam siren was beyond question the most effective fog signal which had hitherto been tried in England. It was especially powerful when local noises, such as those of wind, rigging, breaking waves, shore surf and the rattle of pebbles had to be overcome. Its density, quality, pitch and paratrative power rendered it down. the United States navy can do either of these things, or are we building any that nant over such noises after all other signa sounds had succumbed. The steam siren was, therefore, without hesitation recommended by me as a coast signal. Provision was made for its rotation, so that all points of the sea should receive by turns the maximum or anise sound.

mum or axial sound. Compressed Air to Produce Sound

I have no desire to be severe in my judg ment of the course pursued regarding it, bu I have always regretted, and have frequently expressed my regret to the Elder Brethren and others, that this fine signal was not allowed to remain for purposes of comparison at the place where it was originally used. It was, however, not only removed, but abolished. After the experiments were



Prof. John Tyndall. ended, and after my report had been pre-sented to the House of Commons, a few of the Elder Brethren went to the South Fore-land with a view of determining whether a

siren worked with air under pressure could not be substituted for a siren worked by steam. The air in this new instrument was compressed by an air engine. There may have been grounds cogent with the Elder Brethren for the adoption of this latter. Be that as it may, although the pressure attained by the air engine did not approach attained by the air engine did not approach that attained by the steam engine, and although the experiments of the gentlemen to whom I have alluded were, to the best of my recollection, begun and concluded in a single afternoon, they decided that the air siren was quite as good as the steam siren, and recommended the abandonment of the instrument with which all our experiments and near made and unon which all our

had been made, and upon which all our knowledge had been founded; and the es-tablishment of the air siren at all points of our coasts where such instruments were re-Effect of Wind on Sound.

Effect of Wind on Sound.

During the South Foreland investigation, whenever the wind was too strong to permit of our going to sea, we turned our forced leisure to account by making upon land observations on the action of the wind. Two parties of observars, starting from the station, would proceed, one to windward and the other to leeward, noting as they went their observations of the sounds. It was by no means uncommon to find the range to leeward five, six or seven times the range to leeward five, six or seven times the range to windward. Indeed, there were times when, if circumstances had permitted the observations to be made, the range to leeward would probably have been found ten or fifteen times that to windward.

Everybody knows that sound is propagated in waves. The point which the reader has now to bear in mind is that a sound-wave always moves in a direction perpendicular to the front of the wave. If the front be vertical, the wave will move in a horisontal direction. If through any cause the wave be made to lean backward or forward, the perpendicular will point obliquely upward or downward, and the motion of the wave will be in the same direction. In perfectly calm weather we may suppose a portion of a wave from a distant

rection. In perfectly calm weather we may suppose a portion of a wave from a distant source to be perpendicular to the earth's surface. As long as the weather continues calm the wave will move in a horizontal di-

After Inhaling Poisonous Fumes, He Runs a Knife Through His Tongue,

An account of the performances of the Indian fakir, Soliman ben Aissa, is given by the Vienna correspondent of the Lancet. he exhibition has very properly been forpidden in public places in Vienna, but a series of private entertainments has been arranged. An aristocratic andience was present at the first of these. The fakir comnenced his performances by inhaling the fumes of burnt powder prepared from extracts of snake and scorpion poisons, and by certain quick movements of the head he produced a foaming at the mouth. After these preliminaries needles and other sharp these preliminaries needles and other sharp instruments were thrust through various parts of his body, including a stiletto a foot long and half an inch broad, which was thrust through his tongue. Another feat which is said to have caused great sensation consisted in pulling forward the eyeball and presenting it outside the orbit to the view of the audience between two fingers.

He was "invulnerable" also to the heat He was "invulnerable" also to the heat produced by a flaming torch held for a minute and a half against the under sur-face of his forearm. Chewing glass and playing with poisonous snakes were among his other tricks. The Lance recalls the ex-periments of the celebrated "Fire King"

AN INDIAN PARIR'S TRICKS.

periments of the celebrated "Fire King" who many years ago created a sensation in London by advertising his power to drink prussic acid without injury to himself. The history of his exposure, sudden downfall, and subsequent malignant challenge to Mr. Wakley to fight a duel form one of the most water to ight a duel form one of the most interesting chapters in the older volumes of the Lancet. The Lancet deprecates medical men lending their countenance in any degree to such dismal spectacles.

BROUGHT ITS OWN ANSWER. Remarkable Coincidence Concerning Two

Letters That Went to See. Among the stories of extraordinary coinci-

dences, writes the London correspondent of which he can vouch. A short time ago a lady in London wished to write to a friend in America, whose address she did not know. The only means she had of procuring the address was to write to a mutual friend, who also lived in America. This she accordingly did, and the letter was duly dispatched. The ship which carried the letter was wrecked, and the mails for a dispatched. time lost. They were eventually recovered and brought back to England, the letters, now much damaged by sea water, being re-turned through the dead letter office to the

The letter in question was sent back the lady; who naturally examined it minutely. To her surprise she found that another letter had become closely stuck to it. Holding up the twofold missive to the light, she deciphered the address on the one which was stuck to her own. It was a letter addressed to the friend to whom she letter addressed to the friend to whom she had wished to write, and to discover whose whereabouts her own letter had been dispatched. Her letter thus literally brought back its own answer.

Value of a Lock of Hair.

Pall Mall Budget.] The other day we referred to the Grand Old Man's locks of hair. It would be interesting to know the commercial value of these "lyart haffets." Now, we have to hand an American dealer's catalogue, in which one of the items consists of locks of being the first destroyed by minute sus-pended particles. It was, however, possi-ble that the electric light might possess a residue of the longer wayes sufficient to which one of the items consists of locks of hair of Byron, Shelley, Keats and Leigh Hunt, neatly put up in passe-partout frame on a decorated card, and offered at the mod-est sum of \$100.



IMAGINATIVE ROMANCE OF ARCTIC EXPLORATION.

WRITTEN FOR THE DISPATCH BY HERBERT D. WARD.

SYNOPSIS OF PREVIOUS CHAPTERS.

In a sleeping car journeying from the West to Chicago are six chance acquaintances, Millionaire Vanderlyn, of Chicago; Prof. Wilder, inventor of the Aeropole: Sergeant Willitrig, who was with Greely and with Lockwood on their Polar expeditions: Royal Sterne, a technical institute student; Jack Hardy, who is going into real estate in Chicago, and Frederick Ball, an astronomical tutor. Out of a jesting remark a serious expedition to the North Pole in Prof. Wilder's airship is arranged. Millionaire Vanderlyn furnishes the money, Wilder the conveyance, Willtrig the experience, and the three younger men the enthusiasm. Just as they start officers arrive to serve an injunction on Wilder. The action is brought by Hennepin, who claims the airship is his invention.

CHAPTER III. THE START.

The ear of the "Aeropole" had been constructed especially for the needs of this exthe Leeds Mercury, not the least curious is pedition. It was 40 feet long and 12 broad, the history of a letter, for the accuracy of made of wicker work, covered with aluminum and lined with six inches of felting. There were five windows in the car, each two feet square; one on each side, one on each end and one in the floor. It was heated by a petroleum apparatus especially devised by Prof. Wilder. It was divided into three rooms. There was the dynamo or engine room, whence the ship was to be propelled and started. This was in the bow, so to speak. There was the middle or sleeping room, 15 feet long, and there was the pro vision room.

No dogs were to be taken on. The party did not expect to have to travel on foot in the inacessible regions to which they were to go. Indeed, according to Melville, above the 85th latitude, dogs will be found a nuisance rather than a help. The car was a nuisance rather than a help. The car was designed to carry five men and their personal luggage. This tooted up 1,175 pounds; six months' food for the men, 8,168 pounds; weapons and tools, 584 pounds; scientific instruments in charge of the tutor, 6,117 pounds; a patent car-boat, a Melville sledge, powder, fireworks, etc., 4,822 pounds; two rope ladders, 1,929 pounds; water and alcehol, 12,623 pounds; with a total of 35,418 pounds. 35.418 pounds.

As the carrying capacity of the airship was more than twice as great, there was added a further ballast of water, alcohol, etc., that brought the grand total up to

54,000 pounds.
The "Aeropole," for such was she christened, was now able to keep for two months on the wing, with provisions for at least six months for five men on liberal rations. Above the car was a platform of observa-

tion railed off and reached from the interior-Here the sledge and the beat were lashed. The car itself was built to float, so that in case of accident she could be easily de-tached and used as a miniature Noah's ark. On the night whose morning broke the 1st of July every man of the five adven-turers had slept within the three-acre in-lowers while several man convised the verclosure, while several men guarded the ves-sel of the air. Ugly rumors had got about, and yet, up to this morning, Prof. Wilder had not been very anxious. Two days be-fore, the board covering that protected the huge airship from sight had been taken down, and the enemies of the plucky in-tention, ever hovering about the place, trying to spy out his doings and to serve writs, made up their minds, as we have seen, that a final trial must be made or their bird would soon fly. For three months Hennepin had vainly endeavored to serve that injunction, and in the meanwhile he had been hastening the construction of an airship from the same lines and design, an airsnip from the same lines and design, in order to prove his title before the courts. Backed by Mr. Vanderlyn, Prof. Wilder had gained some hot preliminary judicial skirmishes, and things looked hopeful up to the time of this forcible, illegal attack. The early train had brought 20 special officers, whose instructions was to stop the work un-dertaken by Professor Wilder, if not to de-

stroy the completed wonder. "Open in the name of the law of Illinois!" shouted the leader of the gang again, as he battered at the boited, oaken gate that protected the polar expedition. Five minutes left! It was 8 o'clock in the morning. The five held an immediate consultation with the foreman of the machine shop. Through minute peck holes they could see that the crowd was determined. A hundred roughs and sightseers had collected. Any act of violence seemed possible.

"Why on earth can't we cast off and let her go?" asked Jack Hardy. He seemed in nowise troubled, and had already en-seonced himself in the car by the window

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