# The World's Progress IN THE ARTS, SCIENCES, AND LITERATURE.

CURRENT TOPICS, NOTES AND COMMENTS ON EVENTS OF THE DAY.—INTERESTING SUBJECTS AND NOT-ABLE THINGS WHICH HAVE OCCURRED DURING THE PAST MONTH .- CONTEM-PORANEOUS HISTORY FROM A FAMILIAR POINT OF VIEW.

Portents of War.

Peaceful as the aspect of things abroad may seem, recent travelers in Europe saw enough, while there, to convince them that a great international war is certain to break out before many years roll by. The German armies are in a constant state of preparation. The drilling of the troops is incessant, and there is a steady accumulation of war material in the great arsenals and military depots. The officers all say that they expect active service very soon. The death of Kaiser William, which cannot be far off, may be the signal for the commencement of hostilities. The old emperor, though warlike enough in his time, now that he is on the verge of the grave, does not wish to have his last moments of surroed by the roar of cannon. In the recent Afghan dispute between Russia and Great Britain, it is an open secret that Prince Bismarck and the military leaders of Germany hoped that war should be declared between those two nations; but the aged monarch, to avert hostilities, wrote letters to the Czar, begging him to postpone the evil day. It is the emperor, also, who has interfered to preserve peace with Spain anent the dispute about the Caroline Islands.

But Why War?

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It is difficult for an American to understand why Germany should desire war in view of the possible alliance between Russia, France, and perhaps Belgium, against her; but the leading military authorities in Germany are of opinion that the result of a war will leave the empire in a stronger position that the result of a war will leave the empire in a stronger position than it has ever held in the past. Austria is certain to be the ally of Germany in the event of war, for victory with that power as against Russia would mean a large extension of territory to the south-east, which would include European Turkey and Constantinople. Bismarck thinks, and with good reason, that the German military system is at its highest point of efficiency, and could face all Europe in arms. The incitive to war is to secure access to the ocean, so that all the commercial capabilities of the German empire could be fully developed. To-day this great military power is hemmed in from the ocean. True it has Bremen and Hamburg, but these are free cities, and, though belonging to the German empire, are not well located for commanding the commerce that Germany aspires to control. The greatest commercial seaport on the continent is Antwerp, on the Scheldt, but that outlet of trade is under the flag of the Belgian government. In the possession of Germany, Antwerp would soon rival Liverpool, and the flag of the fatherland would make its appearance in every maritime port of the world. Were Holland to become a part of Germany, Rotterdam would come to the front as a great seaport. All Europe believes that Germany, in view of her maritime ambition, wishes to annex Holland and get possession of Antwerp. If Russia was worsted in a great military duel, the Baltic provinces, the inhabitants of which are mainly German in language, and Russian Poland, would come into the possession of the conquering Teutons. The Russian frontier is now within three days' march of Berlin, and a slice of Russian territory to the east is very much desired by the German rulers. war will leave the empire in a stronger position than it has ever

The Position of Great Britain.

Prince Bismarck always antagonized the great English statesman William E. Gladstone, because the latter was unwilling to form an alliance with Germany against Russia, while the German Chancellor is friendly to Lord Salisbury and the Tory government on account of their known hostility to Russia. England would be a valuable ally to Germany, as she would help to keep France in check; but the Tories would never consent to the occupation of Holland or Belgium by Germany, for this would give a rival naval power a great advantage in a race for mercantile supremacy. Any and all parties in Great Britain would cheerfully go to war with Germany rather than have that power in possession of ports that would give them command of the German Ocean. Yet if selfish national politics did not intervene, Holland and the east bank of the Rhine should belong to Germany, and what would be left of Belgium should pass under the power of the French Republic. Russia also, for the same commercial reasons, ought to be permitted to occupy Constantinople. Were these changes allowed, they would be of immense advantage to the human race, for they would add to the wealth of Russia and Germany, the people of which nations are impov-Chancellor is friendly to Lord Salisbury and the Tory govern-

erished and retarded in their progress by being shut out from their natural avenues to the business and commercial activities of the world.

Condition of Europe.

Apart from this apprehension of war, grave changes are taking place in the condition of the continental nations. All the cities of Germany are growing rapidly. Italy is experiencing a new life. The nation is being unified, for the recruits drafted into the army from one section serve in other sections of the peninsula. The soldier realizes that he is not a Sicilian, a Neapolitan, a Piedmontese, or a Roman, but an Italian. Then the problem of mendicancy is being solved. Beggars no longer abound, for they are forced to work. The Roman church encouraged mendicants, and under the name of charity made idleness profitable, if not honorable; but all this is now changed. In other respects Italy is passing from a third to a second and may in time become a first-class nation. France, however, is under a cloud. Her immense debt has so added to the burdens of taxation that the nation fairly staggers under the load. Then the high protective duties have made production so costly that the customers of France are being driven to cheaper markets, which they find in England, Germany, and Belgium. France has taken rank with Spain and Italy, and no longer rates as one of the great powers of Europe. Americans would do well to study European politics, in which great changes are impending. We live in an important epoch in history, and what is passing before our eyes is as interesting as anything that occurred in the past. life. The nation is being unified, for the recruits drafted into

The Star of Bethlehem.

A new marvel has appeared in the heavens. The nebula in Andromeda, the oldest known to astronomers, has attracted the attention of scientific men recently, because of the reappearance of a star which, it is claimed, is identical with the one that the wise men followed when they came from the east, to hail the newly born Saviour. This is one of the variable stars, invisible newly born Saviour. This is one of the variable stars, invisible for a time, it reappears in about three hundred and fourteen years. It is often as bright as Jupiter. The cause of its waxing and waning is unknown, and the most ingenious astronomers can find no theory that satisfactorily accounts for this curious celestial phenomenon. Stars that once were dim often blaze out in a burst of sudden splendor, but then they disappear. In this case it is supposed that some great sun has, as it were, exploded by the action of internal fires, but the alternate brightness and dimness is unaccountable, save, indeed, on the theory that they are revolving bodies, one side of which is luminous and the other opaque, but this theory will not hold good nor account for all the facts in explaining the peculiarities of this wondrous star that can be seen now in the heavens, on a line drawn from Cassiopeia to the nebula of Andromeda.

King Corn.

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Before the Civil War cotton was regarded as our most important national agricultural product. So large a portion of it was exported that in great part it paid for our imports of merchandise, hence it was said that cotton was king. But although still one of our most important national products, it is surpassed in value of late years not only by wheat and corn, but by hay. Last year, the value of our cotton crop was about \$225,000,000, that of the wheat crop was \$330,000,000, while the value of corn summed up the enormous total of \$640,000,000. This year we shall have the largest crop of corn ever grown, probably 2,000,000,000 bushels, while it is supposed we shall have fully 7,000,000 bales of cotton. The money value of these products may not be much larger than those of last year, because of the increasing purchasing power of the gold unit, but the abundance of these crops will give employment to our railroads and will enlarge the profits of all who deal in them. Although our wheat crop is less than it was last year, nature on the whole has been prodigal. If there is suffering anywhere on the globe it will be because of the unwise fiscal systems of the nations. It is monstrous that any one should be hungry in a world full of food, or suffer from insufficient clothing when the machinery for making clothes is so perfect. dise, hence it was said that cotton was king. But although still

The Progress of Temperance Legislation.

That there is a reason for hopefulness of the temperance people is shown by the steady accumulation of legislation on this subject in nearly all the States. The following summary tells its own story: Maine, Vermont, Iowa, and Kansas have adopted and have in force constitutional provisions against the manufacture and sale of intoxicating liquors.

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Massachusetts, Connecticut, Indiana, Michigan, and Wisconsin have all passed laws restricting the sale of alcholic stimulants, of a more or less prohibitory character.

Eleven States, that is to say, Rhode Island, New York, Pennsylvania, West Virginia, South Carolina, Arkansas, Illinois, Minnesota, Nebraska, Dakota, and Washington Territories, all have passed enactments exacting licenses of a stringent character, or permitting local option.

North Carolina, Georgia, and Alabama allow local option by special action of the legislature. In Ohio there is a powerful temperance sentiment which has behind it an undoubted major-

ity of the voters of the State. There are temperance agitations in other States, and in nine the children in public schools are taught the evil effects of stimulation upon the human constitution. In Nebraska it is a misdemeanor to "treat," that is, to ask a person to drink liquor at your expense in a public saloon. Were a similar law passed in other States it would cut down drinking one half. In view of the fact related above, it is evident that the cause of prohibition is onward.

Social Purity.

One of the most remarkable signs of the times is the interest manifested in England in efforts to raise the moral standards of men in their treatment of women; organizations have been instituted to repress social vice, to make men more chaste, not

men in their treatment of women; organizations have been instituted to repress social vice, to make men more chaste, not only in conduct but in speech. The law has been invoked to afford protection to young girls, and out of the church as well as in the church there is a demand that the canons of conduct for men shall be as severe as they always have been for women. Great meetings have been held in different parts of the kingdom to forward this object which, perhaps, is best explained by the following manifesto of the Archbishop of Canterbury:

"It will not be possible for me to attend the meeting of the Church of England Purity Society on August 6, but I wish to be allowed to address a few words to you on the immediate work of our society. Its objects are unchanged—namely (1) Purity among men; (2) A chivalrous respect for womanhood; (3) Preservation of the young from contamination; (4) Rescue work; (5) A higher tone of public opinion—but it has received fresh stimulus as a society from what has lately happened; and its objects are already seen to be less negative than some had supposed. It has been already made known that I was unable to approve some of the modes recently adopted for obtaining a knowledge of certain facts, or of the indiscriminate diffusion of such knowledge. Nevertheless, all England is now in possession of facts said to have been long known. If so, the knowledge was certainly restricted. But, restricted or not, the time has already come to act upon it; and now it has been thrown on to us to consider at once what ought to be done. It has been brought out that there is a close alliance between voluptuous passion and brutish crueity. Selfishness in this form soon reaches a condition in which it does not shrink from inflicting any amount of wrong, from spoiling the whole future of its victims, and from multiplying the number of them indefinitely. Moreover, it actively demoralizes the parental and family instincts. The evil-doing is confined to no one class of the community. Its agencies are syst anive, of Christians, of citizens, and of families. I cannot feel sorry that this meeting is held a little later than the main excitement. No solid efforts have been wanting in the Church to secure the objects which that excitement aims at, as to the improvement of the laws, and still more of their administration, and as to remedial measures. A demonstration like this is for the Church only an episode in its constant work. The refuges and homes, the persons and communities, and the amount of money devoted to the work as hitherto understood, are very numerous and large. Of late, few, if any, dioceses have omitted to place the subject of social purity in the forefront of their conferences and efforts. It is accordingly the duty of the Church now to convert to practical advance what might otherwise be a momentary horror not unmixed with danger; to sustain at a higher level any feeling which has been aroused; and to elevate and to deepen the general tone of the nation upon moral questions. Lest this should seem indefinite, I would say:—1. That it is the duty of the society to extend its efforts, to enlist many, and especially young men, over the whole country in a chivalrous Christian league, to respect and protect womanhood, to keep themselves pure in feeling and language as well as in act, and to win as many as possible to the same resolutions; so that before language as well as in act, and to win as many as possible to the same resolutions; so that before long all laxness of language may be felt to be as much forbidden to the Englishman as Iring is? to the Englishman as lying is.

Attention has been called to this matter more than once in these columns, and the American society having a kindred object in view will, it is to be hoped, succeed in awakening the conscience of the young men of America on this important subject. Intemperance and social impurity are the twin evils of our day and generation, indeed those great vices are related to each other.

Taxing Incomes

Prince Bismarck favors the imposition of a heavy tax on the incomes of the rich. He thinks it ought to be a graduated tax. That is, the very large incomes should turn into the public treasury relatively more than the moderate incomes. Mr. Joseph treasury relatively more than the moderate incomes. Mr. Joseph Chamberlain, the leader of the English radicals, strongly urges a graduated income tax in Great Britain. To pay the expenses of the civil war, we had an income tax in this country, but it was abolished, and hence large incomes from personal property pay no taxes in the United States. It is land, labor and the wearers of clothes that are forced to support the national, state, and municipal burdens. Thus very rich men, such as Jay Gould, William H. Vanderbilt, and the like, are practically untaxed in this country. This is monstrously unjust to the community, but our newspapers are on the side of the plutocrats, and protest against the levying of an equitable income tax. In Great Britain, however, for a

generation the rich have been forced to bear their share in the burdens of the state, and are assessed eight pence on the pound, that is sixteen cents of our money on every five dollars. The statistics on this point are curious. In 1883, there were 437,566 persons who paid an income tax on the British Islands. As the population is over thirty-five million, it follows that 12.4 in every thousand, that is to say about seventy-five families in a thousand pay an income tax. There is no assessment on families that have less than £100 a year income. Of the total number of incomes taxed 48,495 were below £150; 159,998 between £150 to £200, and those under £200 or \$1,000 were 208,483, or 47 per cent. of the entire number. Between £200 and £300, there were 107,324, making 315,807, or over 70 per cent. of the total, under £300 or \$1,500. Between £300 and £400 there were 47,433, making 363,140, or 83 per cent. of the total, with incomes under £400 or \$2,000. This leaves only 17 per cent. of all the persons paying income tax with an income of £400 or \$2,000. In other words, as there are only 12.4 persons in 1,000 of the population who pay income tax at all, so there is less than one person in 1,000 with an income of over \$2,000. Or putting it in the other form and counting the 437,566 incomes taxed as belonging to the same number of families, there would be only an average of six families in 1,000 with an income of £400 or \$2,000. Beyond the limit of £400 the number of incomes diminishes rapidly for each additional £100 until £1,000 is reached. Between £900 and £1,000 there are only 1,812 incomes. Beyond the limit the incomes are classified by intervals of £1,000. Between £1,000 and £2,000 there are 12,985 ingeneration the rich have been forced to bear their share in the £1,000 is reached. Between £900 and £1,000 there are only 1,812 incomes. Beyond that limit the incomes are classified by intervals of £1,000. Between £1,000 and £2,000 there are 12,985 incomes. The next advance of £1,000 brings the number down to 3,934, and so on, until the number between £4,000 and £5,000 is reduced to 1,000. Of incomes above £5,000 there about 3,145, or 1 to 11,207 of the population. Of incomes above £10,000 there are 1,275, or 1 in 21,370. Of incomes of £50,000 or over there are but 98, or 1 to 360,000. From these figures it is clear that large incomes are not so numerous in England as has been supposed. There is a disposition in all quarters to exaggregate the wealth of incomes are not so numerous in England as has been supposed. There is a disposition in all quarters to exaggerate the wealth of the prosperous rich. In our country, unhappily, the tendency is toward the concentration of wealth in fewer hands; thus very rich are absorbing the wealth of our middle class. This tendency, by the way, is far more marked in democratic America than in aristocratic Europe. It is not a pleasant outlook to know that our middle class is disappearing, and our working class increasing in numbers relatively to the rest of the population.

#### Hope for Hay Fever Patients.

The hydrochlorate of cocaine, the recently discovered remarkable anæsthetic, is found to be a remedy for that distressing and wide-spread nervous complaint, known as hay fever. One-sixth of a grain of this rare drug is incorporated into what are called tabloids, and inserted into the nasal passages. The nostrils are closed until the pellets are melted, when it is found that the sensitive mucous surfaces are restored to health. This will be good news to literally tens of thousands of people, who every year are martyrs to this distressing local distemper. It will no longer be necessary to leave one's business and family and visit a mountain region, the air of which acts as a sedative in this annoying complaint.

## The Spirit of the Age in China.

The Mongolian race embraces a full quarter of the entire population of the globe. Its civilization is vastly older than that of the rest of the world. Its records antedate all other history. Many of the discoveries, which have worked such vast changes Many of the discoveries, which have worked such vast changes in the modern world, were known in China long before the commencement of authentic history. The mariner's compass, gunpowder, movable types, in other words, printing, were discovered and in use in China before the Christian era. All the modern discussions on vexed problems in finance, such as monometallism, bimetallism and the use of paper money are but reproductions of treatises published in China before the history of Ancient Greece was begun. But somehow Confucianism, which was a secular religion and polity, arrested the development of Chinese genius. That nation was led to pay undue respect to the past, instead of being hopeful of the future, which had the effect of putting a stop to the onward progress of the Mongolian race. The mariner's compass, gunpowder and the printing-press have revolutionized the modern world, and now their influence is being felt in the old conservative Chinese Empire itself. is being felt in the old conservative Chinese Empire itself.

The Press and Public Opinion in Eastern Asia.

The mightiest revolution is being worked by the press in China. This new factor in the enfranchisement of that ancient nation is really the work of foreigners. The papers are printed in the ports under the control of Europeans and Americans. The capital is supplied by foreigners, and the native editors are hired by English, French and American capitalists. There is nothing to prevent the circulation of these journals all over the Chinese Empire, and as a consequence, rulers are brought to the bar of public opinion. Of course, neither at Pekin nor in the provinces ruled by native mandarins would one of these independent sheets be allowed to exist, but happing these ditorial conserve are be allowed to exist, but happily these editorial censors are beyond the reach of the officials. At first, of course, there was much indignation at the free-spoken press, but now it is said, even the rulers take kindly to these expressions of public opinion, for the criticisms of the journals spare no evil doers, and while each individual office-holder resents criticism on himself, he is some wall existed when his contemporary mandarins are roundly very well satisfied when his contemporary mandarins are roundly

abused. Even the Empress Dowager of China, said to be one of abused. Even the Empress Dowager of China, said to be one of the wisest women who ever ruled, regularly reads these Chinese journals, and is often influenced in her actions by their criticisms. China contains a larger literary class than any other nation on earth. The competitive examinations for the civil service, which is so new a device in our modern system of government, is of vast antiquity in China. For countless ages it has been the most efficient scholars who have been chosen as rulers of the Most elicient scholars who have been chosen as rulers of the Chinese people. A prodigious number of competitors fail, of course, and from this highly trained and numerous asmy are to come the journalists who will vivify the public opinion and the politics of the coming era in China.

Other Agencies at Work.

Then the military aggressions of the English and French have forced the Chinese to develop their material resources so as not to be at the mercy of their enemies. For the first time they are to be at the mercy of their enemies. For the first time they are working their mines of iron and coal, and great manufacturing establishments are springing up. The foreign missionaries report that they are more favorably received than formerly. This has been due in a great measure to a change in attitude on the part of Protestant missionaries. Formerly they necessarily created antagonism by running counter to Chinese prejudices. They denounced, for instance, the worship of ancestors as being idolatrous, which it was not from a Chinese point of view. Indeed, respect for one's forefathers is meritorious, but of course the Mongolians exaggerated this sentiment. Then the average Chinaman could never understand the doctrine of total depravity. Their experience taught them that some people at least were Their experience taught them that some people at least were good naturally; at any rate, the number of Chinese Christians has lately increased. Altogether great things may be expected in the not distant future from this vast section of the human race.

#### The Panama Canal.

Count Ferdinand de Lesseps announces that the Panama Canal is now half completed, and that it will certainly be finished within three years' time. The work enlarges as it progresses. within three years' time. The work enlarges as it progresses. At first it was intended for six million tons per annum passing through that water-way, and this will be the capacity for the first year, but subsequently the canal will admit of a business of twenty million tons. The Suez Canal at first did a business of three million tons; it has now reached twenty millions, five-sixths of which is supplied by British commerce. The London Times estimates that five of the first six million tons that passes through the Panama Canal will be supplied by British vessels.

Agitation in England.

Great Britain is now convulsed by a political struggle between the Liberals and the Tories. Two millions of new voters will cast their ballots at the coming election, and there is much curiosity to know how they will vote. It is admitted the Tories succeed better in foreign affairs, but, after all, the great reforms are the work of the Liberals. The latter are putting out very radical programmes; their leader, Mr. Joseph Chamberlain, favors the abolition of the Established Church, and wants the Land Laws thoroughly reformed. Not only would be get rid of entail and primogeniture, but he would have the State advance money to enable the agricultural laborer to become a land-owner. Further, he would have a graduated income-tax. That is the larger the income the larger the rate of taxation. Prince Bismarck, by the way, has suggested a tax of this kind in the German Empire. The new democracy coming to the fore in Europe is much more radical and revolutionary than any existing democratic organization in this country. For the aim of the European Liberal is to make use of the State in forwarding social reform, and in initiating measures for the benefit of the poorer classes of the community. to know how they will vote. It is admitted the Tories succeed

### An Oceanic Federation.

The foundation of a great naval and military power was made when the English Parliament, at its last session, passed an act providing for the federation of the English-speaking colonies of Great Britain in the Pacific Ocean. Under the provisions of this important enactment a Federal Council is established in which are to be representatives of the seven Pacific Ocean colonies of England. This council is to have a certain limited control over New South Wales, New Zealand, and the five other dependencies of the British Empire. Thus has been established the nucleus of a mighty power with which we may yet have to contend in the not distant future. These colonies are rapidly growing in wealth and population. They are very ambitious, and have the maritime instinct strongly developed. While the United States in every way discourages foreign commerce, the Australian colonies vote heavy subsidies to promote trade with different countries. It was their money that kept our flag afloat on the Pacific, for they paid our Pacific Mail Company to carry the mails, and only stopped because they found the American Government was not willing to do justice to its own steamship lines. There is talk in England of replacing the House of Lords by a great Federative Council representing India, Australia, Canada, Cape of Good Hope, and all the wide-spread colonies that constitute what has been well called Greater Britain. This union of the South Pacific colonies may be a step in that direction, but it would seem inevitable that in time the Australian Federal Council will set up for itself and form an independent nation. are to be representatives of the seven Pacific Ocean colonies of cil will set up for itself and form an independent nation.

Railway Travel.

The figures furnished by the railroad companies of England give some idea of the prodigious changes in the travel of the world compared with what it was a century, or even half a century back. It is probable that a thousand persons travel to-day where one did a hundred years ago. Last year, for instance, in the United Kingdom there were over 900,000,000 journeys by railway. In New York City the number of passengers on the elevated railway was over 95,000,000. It is a reassuring fact that casualties by railway traveling are steadily decreasing. It is literally true that more people were killed and injured in old mail-coach times than are killed and injured in railway traveling to-day, notwithstanding the enormous increase of those who take long journeys. Last year, for instance, in Great Britain one person in 5,148,088 was killed, and one in 466,424 was injured; but this does not tell the whole story, for in many of these cases it was the passengers and not the railways who were to blame. The companies claim that they are responsible for the death of only one in 22,560,000, and the injury of one in every 800,000. Fully half of the fatalities are those of officers and servants of the companies. Statistics prove what is quite true, that travelers by sea panies. Statistics prove what is quite true, that travelers by sea or land on steam transportation lines are safer than at home, so far as possible injury to life or limb is concerned.

What Ex-Minister Young Says.

John Russel Young, the late Minister to China, in a published interview states that Confucianism is the religion of the ruling classes of China; indeed, it can hardly be called a religion in any sense understood by Europeans or Americans, for it recognizes neither a God nor a life to come. Mr. Young characterizes it as a philanthropical and sentimental atheism. Confucianism is a secular religion embracing a highly developed ethical system. The Chinese are said to worship their ancestors, not in the sense that we worship God, but partaking more of the Roman Catholic reverence paid to patron saints. It is an exaggerated expression of filial affection. The Chinaman honors learning but he despises the warrior. Should a charge occur, and a military chief ever become as admirable in the eyes of a Chinaman as he is in Europe or America, what is to prevent the myriads of Tartars and Mongols marching from Pekin to Paris? Mr. Young points out the fact, that it is the Tartar who has been the great invader of other nations, as witness Genghis Khan, Tamerlane, and Attila. The Chinaman is brave, docile, and intelligent, and were a great leader to appear, they might overrun the civilized world by the mere force of numbers. Happily their contempt for war and warriors has so far saved civilization from this peril. a philanthropical and sentimental atheism. Confucianism is a

Petroleum for Whisky.

Chemically, oils are of the same materials as alcoholic spirits, that is, they are hydrocarbons. It is now said that experiments have been made successfully to convert petroleum into whisky. Should this succeed, it will add to the terrors of the murderous stuffs sold in the liquor shops. It is now stated officially that the consumption of liquor in this country yearly is 69,156,903 gallons of spirits, 19,186 barrels of fermented liquor, and 20,509,000 gallons of wine. The quantity of beer consumed is about 595,000,000 gallons. In other words, two gallons of liquor are consumed for every one bushel of wheat.

Ocean races have been run between an English cutter, the Genesta, and the Puritan, an American center-board yacht, and the latter has won. The contest excited a great deal of attention on both sides of the Atlantic; but, after all, of what practical value are such trials of speed? The days of sailing craft are over. An improvement in the construction of these vessels is of little or no value. Not so with steamships. Any improvement in their construction or speed is of the utmost moment to all who navigate the ocean or the water-ways that fall into it. The steamship America has made splendid time between New York and Liverpool, consuming only one hundred tons of coal per day. The other fast English steamers, such as the Ebruria, use up over 300 tons per day. Notwithstanding the well-known imperfections in all appliances for utilizing the full amount of energy which is due to the combustion of coal, both on land and water, the great improvements in that direction which have been made during the last quarter of a century are indeed remarkable. A single example, for instance, is afforded in the case of the steamer Burgos, built especially to carry cargoes cheaply at a low speed, and which left England for China with a cargo weighing 5,600,000 pounds. During the first part of the voyage, from Plymouth to Alexandria, the consumption of coal was 282,240 pounds, the distance being 3,380 miles; the consumption per mile was, therefore, only 83,5 pounds, and the consumption per ton of cargo per mile 0.028 pound; in other words, half an ounce of coal propelled one ton of cargo per mile. It is further stated that the best locomotive performance in this country shows a consumption of about two ounces of coal per ton of freight hauled one mile, at the rate of thirteen miles an hour, including stoppages; on lines having grades of from 53 to 70 feet per mile, the consumption often rises to five or more ounces. in their construction or speed is of the utmost moment to all