生的計劃機關 医软件性 中的人 SCIENCE AND INDUSTRY.

The London Hospital, referring to The introduction of lase-making in a erippies! home and industrial school der girls, says the pupils proved remarkably apt and were delighted with their new task.

The exporting of American shoes In of comparatively recent growth. In 1884 this country exported only But for the Secol year 1901 it sent abroad \$5,500,000 worth of boots and

Wood yarn, as now manufactured in Germany, is said to cost about half as much as cotton years. It is supplied in the natural gray state, and does not blench well, but can be dyed almost mny color. It is claimed to be well adapted for a variety of uses, such as linings for garments, hed ticks, Sinds, erumb cloths, etc.

The so-called "waiting mice" of Chine and Japan have been supposed to owe their dancing peculiarity to Misease of the inner ear. After thorough exhibition of the ears of these rimbie animais, Dr. K. Kishi the conclusion that the orman are perfectly healthy and that the district is an effect of centuries of confinement of the race in amall

Recent investigations by two physicians of Rome as to the depth of sleep have been carried on by means of an instrument called on "ethnome-Ber," invented by Prof. Griessbach. This instrument probes the flesh of the eleeper with pins of steel, varying in sharpness. A register of the depth of sleep is thus provided by means of the amount of pain inflicted necesgary to awake the subject.

The production of iron ore in France In centered principally in three dis-tricts—that of the northeast, or the Mourtheet-Moselle, is the most imthe 5,500,000 tons of iron ore mined in France annually: that of the Pyrenees, producing 250,000 tons, and that of Bormandy, 180,000 tons. The last may be said to be in its infancy. From the geographical position its ores are generally sent to foreign countries, while the ores produced in the other districts are consumed by the metal-Surgical industries of France.

SAYS BRITISH ARE UNDERFED.

Bir J. Crichton Browne, M. D., Declares Racy is Deteriorating from Too Little Food.

Thirty per cent. of the population of Great Britain is underfed. Such is the declaration of Sir J. Crichton Browne, M. D., president of

the medical section of the internationtal congress for the welfare and pro-Section of children, lately held in Lon-"The conquest of South Africa is complete, the empire is in a state of

dangerous illness and has been erowned and may reasonably look forward to a long reign. Now, what about the many thousands of young Britons right here in Edward's imperial city who, for lack of food, may never weach healthy and robust maturity?"

The above are the sentiments of philanthropic workers in the slums, and in the factory districts. Sir Charles Browne's statement has a broader application.

He finds that even in the rural districts the food habits of the masses are calculated to prevent boys from growing up into useful material where with to fight and conquer Great Britain's enemies in war.

"My observation leads me to believe," cays the distinguished medical authorsty, "that the masses are impropperly fed as well as underfed. For exsample, in rural districts in Scotland, where milk was to be had in plenty, it he now scarce. It is sent off to the city to be sold. The children are fed on bread and tes and cheap jams, and given catmeal has passed into the background as a staple article of

diet. "When we turn to the townsfolk we mee in the ansemic faces, the lack of Mound teeth and the stunting of bodies evidence of deterioration due to miswas of food!"

In the factory town of Dundee boys, between the ages of 11 and 12 years were found to average ten pounds under weight and nearly four inches under height. Girls were found to fall Thelow the standard also.

The publication of these figures and enther statistics on the subject has attracted much attention throughout England. Nothing can cause greater consternation in the average Briton than the conviction that his race is deteriorating. The matter is likely to - he brought up in parliament.

Grentest of All Craues, No sport ever became a mania of the proportions of cycling. Six years ago wheelmen were a guild with political power. In some cases they dictated legislation. They were responsible for road improvement. They started in the face of opposition and fought their way against prejudices. They became so strong numerically that politicians began to play to them for their support. They forced recognition to their rights in the roads. Their races became events of the year. Their clubhouses were costly, their organizations highly perfected, and the optimistic could see no end to the career of the bicycle. But with a suddenness as sensational as the growth of the fad, the hottom dropped out of it .- Chicago Tribune.

Good Cause to Worry. "First Missionary You look worried.

Second Missionary-I am worried.

c**™What abo**ut?" "About my future."

* **Why should you worry about that?" "I heard one of the cunnibals say that I was a regular pudding, and it may oc-.. cur to him that the proof of the pududing is in the esting."-Brooklyn Life

THE USE OF OIL FUEL

Discovery of New Wells Will Increase it Very Largely.

Coal Will Be Displaced to a Great Extent on Ocean Steamers and in Many of the Commorcial Works.

The discovery of new sources for the supply of fuel oil has reawakened the possibility of using it in Atlantic liners and other high speed vessels. The objections hitherto have been uncertainty as to the continuance of the present oil fields, the slight margin of saving in comparison with coal in many localities, and want of success in obtaining good results through inexperience in the management of oil fuel, but these disappear, in great part, with the apparently unlimited production of the Texas and other new oil wells, and new types or systems of burners which are an improvement upon their predecessors, writes E. P. Watson, in Scientific American. Many of the neval powers are now fitting out war vessels to use oil fuel, and others are experimenting with a view to its adoption later on. The German admiralty have used oil on their China station for auxiliary purposes for months in lieu of coal. The Hamburg-American company has four ships using liquid fuel wholly, and the North German Lloyd two, while the Dutch mail and cargo boats in the far east employ oil solely as fuel. There are over 30 depots or, stations now where oil can be procured regularly by vessels, and more

are being laid down as rapidly as pos-

Oil fit for fuel purposes has the

following chemical composition: Car-

bon, 88 per cent.; hydrogen, 10.78 per cent.; oxygen, 1.25 per cent. The two other impurities present in the mass are water and sulphur. The action of water is obvious, while the sulphur if free, not in chemical com-bination, attacks both iron and steel and mechanical means to separate the water, if oil is used on shipboard, are necessary. Recent experiments show that two tons of oil are equivalent to three tons of coal, while by volume 36 cubic feet of oil are equal to 67 cubic feet of coal as ordinarily stowed in bunkers. This increases the radius of sotion of a war vessel 50 per cent. upon the bunker weight allotted and nearly 90 per cent. upon the bunker space, without any alteration of the ship. It is also urged in favor of old that it is easily supplied in midocean-from transports-while coal presents great difficulties under the same conditions. In commercial work the gains predicted for oil vs. coal are surprising. In high-speed ships the weight and space occupied by the propelling machinery leave no room of any account for freight. The change from coal to oil would add nearly 2,000 tons to the carrying capacity of a given ship, while, as oil fires never have to be cleaned, the speed would be constantly maintained. With these and many other advantages in favor of liquid fuel it isnot unreasonable to look for its general adoption in the mear future, both on land and sea. Many locomotives are now using it, and others are being built for oil service, both in this country and abroad.

MAKING FARMS IN NEBRASKA.

Agriculturists Catch New Land by Means of Dams and Prevent Soil from Being Washed Away.

Farm building is the latest vocation of the Nebraska farmer, says the Chicago Inter Ocean. After the harvesting of the crops thousands of farmers in eastern Nebraska will spend weeks in the construction of dams that will catch for them new land. Most of these farmers have been driven to this by the heavy rains of this summer. which have carried away the black soil from their farms and left them with

Lewis C. Burnett, of Otoe county, in a published letter, insists that the impairment of the soil in this manner this year far exceeds the loss caused by the drought of last year.

only clay subsoil.

"The surface soil that is washed off with each rain or flood," he says, "is to the earth what cream is to milk. and. while the aubsoil is rich and with plenty of manure and good cultivation can be made to produce good crops eventually, the black earth which it has taken ages to prepare for the use of man can never be reproduced. The loss will not be felt in diminished crops this year, but the soil will never be as good as before, and the droughts of coming years will huft the farmers

worse than ever." It is agreed by the experts that the only way to save the black soil for Nebraska is to build dams that will catch the sediment before it goes into the Missouri. This is comparatively inexpensive, but involves a great deal of labor. The farmers have been engaged in recent years in tiling and ditching their lands, and this system, while abolishing chills and fever, has robbed the land of its natural storage reservoirs and impoverished the

By a creek which empties into the Missouri, Charles Clayton, of Syacuse, has a 400-acre farm which he "built" by the use of dams. This year he has caught 18 inches of soil-wash on an 80acre farm. His whole farm is made up of washings from his neighbors" holdings. He has built up his farm until it is beyond the reach of high water. One 200-acre field of corn this year will yield 80 bushels to the acre, while none of his neighbors' will go over 50. In one part of his farm is an eight-foot fill.

PUNGENT PARAGRAPHS.

Penurious Maid.--"He made her sa offer of his hand." "Did she accept?" "No. There wasn't enough in it."-Philadelphia Bulletin.

"What did you get out of your gar-den this year?" "Not a day went by that I didn't have one of my neighbor's chickens for dinner."-Town Topics.

A Benefactor .- "But has he ever done anything useful?" "You bet he has. He's the man who invented the new stroke in polo."-Cleveland Plain Dealer.

Went Them One Better.-Did her father forgive her for running off and getting married?" "Yes, the old man said that he would forgive and forget them."-Indianapolis News.

Humoring His Customers.-Prof. You Note-"You haf a vine collection of classic music here." Music Dealer-"That's for young ladies to look over previous to asking for a copy of "The Honeysuckle and the Bee."-N. Y. Weekly.

In Trouble.-"Alas, alas," he cried, 'if only my three girls bad been boys." In truth, he was in sore trouble, with three young men trumming three banjos and singing three different love songs under three windows at one and the same time. "I might as well be a victim of insomnia," he waited.—Chicago Post.

KING PARDONS OFFENDERS.

Magiand's Ruler Did Not Allow Mis Iliness to Delay This Part of Corenation Plan.

Throughout his grave illness, except, of course, when he was at his very worst, King Edward never lost his interest in any of the schemes associated with his coronation. One of these concerned the pardon of a certain section of military offenders. whose sentences had mearly expired when the postponement of the great ceremonial was announced. The war office officials seemed to have been assailed by doubt and suggested to the king's advisers the desirability of taking no action until the issue of his majesty's illness was known. At the very first opportunity this was made known to the king, but his majesty immediately commanded, as he did in the case of the dinners, that there should be no delay and no postponement.

An appeal, I learn, says the Lot

don correspondent of the Washington Star, is to be issued by the war office to the large employers of labor in behalf of the men who are returning from South Africa. The appeal has been inspired by the board of trade, which is seriously concerned regarding the effect upon the labor market of the arrival in this country of 80,000 men from the front. That in round figures is the number of reservists, militia, yeomanry and volunteers who were on active service when peace was declared. They are not all returning at the same time, of course, and many of them indeed elect to take their chances in Africa, while a small proportion may have their civil positions in this country kept ope them. Making all allowances, however, there will still be a very large number of men thrown upon the labor market possibly with disastrous results. The great majority of these men must certainly join the ranks of the employed, and the military authorities scarcely hope to be able to secure situations for them all. It is hoped, however, that the appeal to employers may have some effect in preventing a serious displacement in the labor market.

MEDIAN AGE INCREASING.

Report of Census Bureau Showing Population Comparisons by Deendes.

The census bureau has issued a statement showing the increasing age of the population from decade to decade. The statement gives the results of computing the median, instead of the average age. The median is such an age that half the population is under it and half is over it.

The median age of the total population in 1900 was 22.8, as compared with 21.9 in 1890. The median age of the white population in the last census year was 23.4 and the colored, including negroes, Indians and Mongolians, was 19.7, while in 1890 the white population was 22.4 and the colored 18.3.

The report shows there was an increase in the median age of the white population during each decade from 1810 to 1900 amounting in the 90 years to 7.4 years, or an average amount of about five-sixths of a year in a decade.

The median age of the colored population increased after 1830, but with less regularity. The median age of the colored population increased three years in the 70-year period from 1830 to 1900, or only about half as fast as that of the whites. But during the last 20 years of the century the increase for the two groups has been substantially the same, 1.9 years for the colored and two years for the white.

The statement concludes as follows: "Many complex influences have cooperated in producing as a resultant this steady change in the age composition of the population. Three may be mentioned, the rapid progress of medical and sanitary science, which has tended to increase the average length of life: the decrease in the relative number of children born, which has made the earlier age perfods less preponderant numerically in the total population, and the influx, especially since 1840, of great numbers of adult immlgrants, increasing the number in the

older age periods. "The difference between the white and colored populations is doubtless due to the fact that the influences have wrought more powerfully upon the white race than upon the colored."

LATEST GREAT SEAL

Government Documents to Be Embelilshed with New Design.

Will Be the Fourth in Use by the United States Since the Decimen-tory of the Scale,

One of the smaller appropriations, but one of the most interesting, made by the recent congress, was one of \$1,250 for a new great seal of the United States. Secretary Hay said the old one was worn out; that it no longer made the proper impression, and that he must have a new one. And congress, realizing the necessity for the United States Kaving a really impressive great seal, promptly voted the necessary money and the seal is now being cut, says a Washington report.

This will be the fourth great seal that has been out for Uncle Sam, each one practically reproducing the last in design and being cut to replace one that had worn itself out in the service of the country. The first was cut in 1762 and was used not by a secretary of state, but by congress. The first document, at least the earliest that has been preserved, bearing its imprint is dated September 16, 1782. It is a parchment commission granting Gen. Washington full power to arrange with the British for an exchange of prisoners of war. The document was signed by John Hancock, president of congress, and countersigned by Charles Thomas, secretary. The seal instead of being attached, as is now the custom, to the lower left-hand corner, was impressed upon the parchment over a white wafer festooned with red in the upper left-

hand corner. The act of congress which created the department of state on September 15, 1789, also authorized the use of this old congressional seal and gave it into the custody of the newly-created secretary of state. It continued in use until 1841, when a new one was cut for Daniel Webster, secretary of state under Tyler. This in turn was declared worn-out, and the third, the one now in use, was cut for Frederick Frelinghuysen. who was head of the department under Arthur. The design has remained practically unchanged except for a slight variation in the form of the "glory" over the eagle's head. The seal of 1841, however, Webster's seal, was notable in that the eagle's left talon grasped only six arrows instead of the 13 required by law.

The new seal now cutting will have 13 olives on the olive branch, and word has gone out that the eagle's claws will be turned forward, not back, as they have in the old seal. This does not, when one studies it out, mean that the new eagle is to be what the children call pigeon-

It is interesting to note that the first seal lasted nearly 60 years, the second 43, while the third has lasted only 17. This wearing out of cut steel bears eloquent testimony to the increase of Uncle Sam's business, and it is fair to conclude that the seal now being cut will hardly last a decade. Evidently in the early days there were not many papers of the first importance to which the great seal had to be affixed, for it was the custom to affix it to all civilcommissions of United States officers, whether appointed by the president alone or with the advice and consent of the senste after they had received the president's signature. That custom, however, fell into disuse, and the great seal is only affixed to the commissions of cabinet officers and of diplomatic and consular officers, to ceremonious communications from the president to foreign governments, to treaties, pardons, proclamations, exequaturs to foreign consular officers in this country and to miscellaneous commissions of certain civil officers. The president's signature is no longer regarded as warrant in itself for affixing the great seal. Nowadays the department seals are affixed to the commissions of the different departments and the state seal reserved for documents of real state impor-

Big Price for Old Stumps,

Old walnut stumps are on a boom throughout Tennessee. Stumps that have remained unnoticed for years and were regarded as worthless are now eagerly sought after at prices that seem almost fabulous. An Indiana concern has had men traveling over the country buying every old walnut stump that could be found. At first the prices paid were small, but as the eves of the stick timber folks began to open the prices went higher and higher until now they are out of sight and the funny part of it is that the uglier, knottier and more unsightly the stump the more money it will bring. The stump of a walnut tree that was cut down several years ago brought more than the whole of the tree. It is stated that the stumps are made into vencering material and used in the manufacture of high-grade furniture. -Chicago Chronicle.

Rare Stonework Discovered. During the progress of the present restoration of St. Patrick's cathedral, Dublin, the remarkable discovery was made that underneath the plaster of the time of William and Mary real and beautiful thirteenth century stonework had lain hidden for generations. Besides the gift of the new organ, Lord Iveagh has caused it to be moved from the north transept to a fine organ chamber, reached by a spiral staircase of stone, copied from one in Mayence

SWIMMING HOLE TALK.

it Made the Prosperous Looking Man Change His Mind About Going to the Seashore.

"All this 'old swimming hole' talk is inclined do make a man homesick," said one of the prosperous looking group who were being served with cooling liquids by an ebony-hued waiter, who was polite to the point of servitude, according to the Cincinnati En-

quirer. "When it first popped up in the Euquirer several weeks ago I had it all fixed up to take a belated fiver to Cape May or Atlantic City. But I didn't. I caught sight of that swimming hole contest announcement, and it brought me back with a yank to certain days long ago when we didn't dare get our hair wet for fear we'd get a licking when we got home."

A reminiscent smile stole around the board, and one man quietly ordered mint juleps for the crowd. It seemed the only appropriate drink at the

"Well, the more I thought it over the more the idea hung to me until at last I turned to my wife.

"'Mary,' said I, 'didn't you say the other day we ought to go out and see my mother this summer? I thought so. Well, we're booked to start Tuesday morning!"

Bay!"-and there was a far-away look in the big man's eyes-"did any of you fellows ever go back to the home where you lived as a boy and do all over again the very things you did when you were a freckle-faced, awkward urchin in knickerbockers? Well, that's just what I've been doing for three weeks, and I want to inform this squad that I've had just about the most scrumptious vacation I ever put in. I climbed all over the old barn that I once had to climb over looking for eggs and new hen's neets. I squatted in my bare feet-in the running water of the springhouse, and drank cool, sweet milk out of the crocks just as used to when I was a boy, but this time my own eight-year-old prodigy was there to help me. That prodigy was also with me whenever I sauntered down to the creek in the evening, both of us peels ing off our clothes as we walked along. The youngster enjoyed it, but his delight wasn't one-two-six with that of mine as we splanhed about in the water or paddled around in the dug-out that has done duty at that particular spot for lo! these many years. Som ings we would walk to the little old schoolhouse where I went as a youngster. I was pleased to see that, aside from the added dignity of a bell and tower, it hadn't changed a particle. On the banks of the creek near by I found the beech tree I had carved my initials on when a lark at that school. and the initials were still to be seen.

"When the gloaming began to gloam the kid and I would return from these wanderings and stretch out in hammocks on the big. oldfashioned porch, where all the rest of the family would be gathered. Along about nine o'clock mother would bring us-perhaps-a pitcher of milk from the springhouse, with gingerbread to accompany it; orethat had been suspended in the well all day-not as cold as ice; but mighty near it; or, again, it might be a banket of harvest apples that, red-striped and delicious, lay under the trees of the orchard. Anyhow. it would be something good that would be waiting for us at bedfime. The prodigy and I together occupied a great, old-fashioned four-poster. and when we had retired to it mother would come to see if we were comfortable and kiss me good-nightjust as she used to-and just as the kid's mother does with him nowa-

"Well," added the big man, as he noticed that his audience seemed willing to stand for more, "that will be about all. I merely want to remark that I've been to the ocean beaches and I've been to the mountains, where they have artificial lights and live artificial lives. but when vacation season comes next summer I'm going right back to the old home and drink milk out of the crocks and wade in the creek."

The big man left an opening for some comments, but the whole gang seemed absorbed in deep thought, and nobody said a word for ten minutes. Even then it was only a jerky. order for four more mint juleps.

Unfamiliar Feet.

Railroad accidents, so fruitful of tragic incidents, are also occasionally productive of bits of humor, although it is not often that the humor finds a place in the newspaper reports of the accident. Que amusing incident is reported of a woman to whose care a young man had been intrusted after he had been badly hurt in a collision. He was unconscious when he was carried to her house, and did not open his eyes or speak for some time. His first conscious moments were evidently full of bewilderment. He looked all about the room, and finally let his eyes rest upon his bandaged feet. He looked at them long and carefully. A puzzled frown slowly gathered on his face. With a feeble finger he pointed toward the foot of the bed. "Those are not my feet," he said. "My feet had russet shoes on them."-Youth's Companion.

Children's Sayings. Arthur-aged three-had a marked fondness for a dilapidated Skye terrier belonging to a neighbor. When his sister was about to drive the dog away he remonstrated: "We never sawed a gooder dog than Johnny Beckwith am, are we Grace?"-Woman's Home Companion.

Criticiam. Sidney-How do you like "Belinds Bubble, of Bubbleville Hall?" Rodney-Oh! It is a novel which

will captivate all those people who move their lips when they read-Puck.

MOST USEFUL SCIENCE

To Mathematics is Accorded the Foremost Place of All.

Considered the Most Indispensable to the Well Being of Humanity Other Sciences.

The question: "What is the greatest of all sciences?" has been repeatedly asked, but never satisfactorily answered. Nobody knows. The question is similar to that raised in the ancient fable of the lips and the tongue, in which each claimed that it was the most important organ of speech. The tongue told the lips that they were useless without it, and bade them open and see if they could talk alone. The lips claimed that they were the most important, as the tongue could not talk while they remained closed. So with most of the sciences—they are so interdependent on each other that they are nothing slone, states a scientific authority.

What is the greatest science? Chemistry? Physics? Mathewatics? Astronomy? The natural miences? Geology? Paleuntology?
It is obvious those sciences which

are greatest, considered in the light of their indispensability to humbel happiness and well being, are those which are the most elementary, taking the word to mean singleness of composition. The question, then, narrows itself down to "What sciences are the most indispensable to human well-being, and of those, which are the least complex and dependent on other sciences?"

Examining the claffins of those mentioned above, it is obvious that astronomy, grandest of conception and treating as it does of matters so immense that the earth and all it contains seems insignificant beside it, is nevertheless made up of several other sciences. Mathematics are are the very root and heart of astronomy, while optics (physics) in its means of expression. As chemistry and physics are also vital parts of it, speculation and theory are about the only parts of it not made up of other sciences.

The natural sciences can be skipped t once. It requires no argument to see that the world could dispense with them before chemistry or phy-

Chemistry, then, or physics, or mathematics?

Physics, the study of the phenomena presented for observation by bodies (which definition has been stretched to include the phenomena of light, heat, sound, electricity and magnetism), is so interwoven with mathematics that it is almost a part of that science. Chemistry, less dependent on the latter than physics, yet needs physics at every turn. And physics depends on mathematics.

But what do mathematics depend on? What science must be at hand and understood for a comprehension of the principles of the science of numbers, quantities, volumes, sections, movements? Not one.

To mathematics, then, should be accorded the place of the most indispensable of the sciences, a position fitting the one which among exact departments of knowledge is known as "The Exact Science." the branch of learning which antedates all others, and on which all others depend.

It would be idle to say that any of the great departments of human knowledge are greater than any of the others. All are colossal to the intellect, as they are pygmies to what they will be, but conferred by their usefulness, their indispensability, the science of quantity, mathematics, stands at the head of the list, unerowned king among a domain of subjects as great as they are dependent.

BULGARIAN PROPLE.

The Men Are Pensants or Soldiers and Make Their Women Slave in the Fields.

It is a strange country of contrasts,

this Bulgaria that people have so long watched as a danger spot. The peasant is a heavily built fellow, with a Kalmuk nose, if he happens to be pure bred from the original Samoyede stock, which is not likely. His language has become Slavic, which means a language in which "beefsteak" is "mpiphteki" and "omelet souffle" is "omelet cuphie." The Bulgarian is a peasant or a soldier; he knows no other trade. As a farmer the sheep is all in all to him, food and clothing and companionship, says the Era. He lives in a hovel, does not understand why he should be taxed and makes his women slave in the fields. He is called close-fisted, churlish and suspicious, and has some of , the virtues that often go with those qualities. When Bulgaria became practically free from the sultan there were many Turks left in the country. These are gradually being crowded out, but there is still a mosque in Christian Sofia, and in the palace of the sobranja or parliament, where the members have better accommodations than the lords of Britain on the Thames embankment, some 20 Turkish deputies always sit together and exert an influence that they never could do in their own land by voting always with the party in power. Every Saturday the members of the sobranje are paid at the rate of 15 francs a day, all in silver five-franc pieces. These peasant lawmakers knot it up in handkerchiefs, grin slowly and shake the jingling pieces playfully in one another's faces. They are playing at statesmanship yet but fairly well on the whole.

L'ABEILLE DE LA NOUVELLE-ORLÉANS