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SCIENCE SERVICE

THERPHONE, MAIN 8615 WASHINGTON, D. C.

No. 25.

## SCIENCE NEWS BULLETIN

Edited by Watson Davis

September 19, 1921.

URGES ARTIFICIAL SELECTION TO PRODUCE AMERICAN RACE OF DEMIGODS.

(By Science Service) Release Tuesday afternoon, September 27.

New York, September 27 .- "Americans, it depends on you, I solemnly declare, to save civilization and to produce a race of demigods", declared Dr. V.

deLapouge, of Poitiers, France and distinguished authority on anthropo-sociology, at the Second International Congress of Eugenics here this morning.

In 1887, in the Revue d'Anthropologie, Dr. deLapouge made this prophesy, which he repeated at the international gathering today .:

"The organization of an artificial selection is only a question of time. It will be possible to renew as a whole, in a few centuries, all humanity, and to replace the mass by another much superior mass in which the selection will be continued to the uttermost. I am confident that the Anglo-Saxons will lead in such an unequalled enterprise, and will put into practice a theory of which up to now they have had the monopoly."

"Social selection tends to substitute inferior races for the superior races, eugenically richer," he said. "The superior races whose economic needs are greater, cannot raise numerous children, because it costs too much to educate and establish them; the inferior races whose posterity only demand some years of feeding and clothing, and who are benefited besides by the assistance of the others, can allow themselves a larger posterity."

"In France, the War gave a blow to the superior elements which may prove to be mortal. The best of our young men have perished or been invalided in the proportion of at least 2 to 3, if I may judge by our students and by the aristocratic families of my surroundings. Many of these have been wiped out, the last male having been killed. In these same circles the young women will not find husbands, partly because the young men have disappeared and partly because the high cost of living has made their dowries too small to be able to furnish, even if joined to the earnings of a husband, resources sufficient to found a family. It is necessary to know that among us the salaries of the intellectuals are lower than those of workers. If one takes the sum of salaries of an entire life, deducting the expenses of study and maintenance up to the first salary, this inferiority is very evident."

"I have reason to believe that the disastrous results of selection exercised by the last war are the same among all the other people of Europe. In Russia, for example, eugenical inheritance may be considered destroyed."

"We are present at a crisis of the superior and eugenic races, threatened With extinction at the moment when an abundance of superman is necessary."

"The time is no more when the earth will easily furnish necessities. In a few centuries, there will be no more metals, nor coal, nor petroleum, nor food sufficient for the population of the world. In social life, the problems to be solved by the statesman, the chief of industry, of commerce or of the bank, will become so complex that they will pass the limit of present mentality. Tomorrow will no longer find a man who may surmount certain new tasks, and I dare say that the best men of today are severely tried even by present difficulties."

"The mass of knowledge overwhelms the understanding. The time is no more when all can be explained by the atom unchangeable and indivisible, the cell, transformation, gravitation and Euclidian geometry. Science is on the brink of the infinite, and the most brilliant minds become weak before the tasks in sight. It is necessary to forge greater memories and sharper perceptions."

(SEE PAGE 6 FOR STORY ON MILLION VOLT TRANSMISSION.)

"The hour is come when man must choose if he will become a demigod or if he will return to the barbarism of the contemporaries of mammoths. And it is not a figure of rehetoric to speak of a possible return to barbarism. The least enriched classes, the remainder of uncivilized people on the entire earth, reproach the chosen ones with having created a civilization which multiplies their desire far beyond the possibility of satisfying them. A great movement has begun among the inferior races and classes, and this movement which has the air of being turned against the whites, against the rich, is turned against the superior intellectual elements and against civilization herself. The war of classes is indeed the war of races."

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DAIN IN URGES LARGE FAMILIES FOR WELL-BORN TO SAVE RACE

(By Science Service)

Release Friday, September 23.

New York, September 22.- To assure racial progress the well-born of this generation should forget personal discomfort and raise large families that will arrest the racial deteriation that is taking place because of the multiplication of the inferior and ill-endowed. This is the belief of Major Leonard Darwin, of London, son of the famous Charles Darwin, and president of the Eugenics Education Society, who addressed the Second International Congress of Applied Eugenics at the American Museum of Natural History here this evening.

"Young men of today who are endowed with good natural abilities and constitutions will be nearly all certain in time to earn for themselves a fairly good livelihood, while the reverse will be the case with those ill-endowed by nature," he said. "Then again, those who are members of small families will receive greater advantages in education and in many other respects than will the members of big families and they will in consequence more easily win their way to the front. These two selective processes will be more effective as civilization advances. a result we may expect to find in the future in the ranks of the well-to-do a most harmful combination of qualities more and more often appearing. Superior inborn Qualities will be combined with all those natural tendencies which tend to favor the production of small families and these latter tendencies will include natural infertility and an innate desire to consider the welfare of children as yet unborn. The result to be anticipated is that, in comparison with the ill-endowed, the naturally well-endowed will as time goes on take a smaller and smaller part in the production of the coming generations, with a tendency to progressive racial deterioration as an inevitable consequence".

"Do existent acts confirm or refute this dismal fore-cast? Statistical inquiries prove conclusively that, where good incomes are being won, there the families are on the average very small. Moreover, history teaches us that in the remote past ancient civilizations, after rising to a climax, often began to sink and sink until they disappeared off the face of the earth.

"I can find no facts which refute the theoretical conclusion that the inborn qualities of civilized communities are deteriorating, a process which must inevitably lead in time to an all round downward movement. I am, of course, regarding this question broadly and generally, but I cannot refrain from adding that the United States has a mighty future before it, on which the civilization of the whole world may in a large measure depend. It is, therefore, doubly incumbent on its citizens to consider whether their best or their worst stocks are now multiplying most rapidly. If it is the worst stocks, and if no steps are taken to remedy the evil, then this country may in consequence miss an opportunity of filling a most glorious page in future history."

"If in all civilized countries these forces are producing deteriorating influences by acting on the masses of the people, then the only way to counteract this endency is to set in operation other forces which will affect large numbers in the opposite direction," Major Darwin pointed out. "But how is this to be accomplished? What is necessary is to make it widely and deeply felt that it is both immoral and unpatriotic for couples sound in mind and body to unduly limit the size of their families. No doubt difficulties will be experienced in deciding to what extent the duty of parenthood is imposed in individual cases. The main aifficulty will, however, be to get this duty strongly felt by the mass of the people, for success in this endeavor would, I am convinced, have a much greater effect on the size of families than common sense alone would indicate. Failure is, however, certain if the problem is not attacked with religious zeal. There ought to be a great moral campaign against the selfish regard for personal comfort and social advancement, for these aims must in a measure be sacrificed on the altar of family life if racial progress is to be insured. We must all learn that if envy and jealousy could be banished, the happiness of our children would depend greatly on their inborn qualities and but little on their place in society. We should recognize that we shall best serve our country by bringing healthy and intelligent children into the world, provided that we can give them a sound education and a fair start in life; and all of us should be ready to make some sacrifice of social position in order to obey our country's call in this respect. The nation that wins in this moral campaign will have gone half way towards gaining an all round racial victory."

WAR ROB BED FRANCE OF SIXTH OF ITS WORKERS

(By Science Service)

Release Sunday, September 25.

New York, September 24.- Due to the effect of the War on the birth and death rate of France, that country fifteen years from now will lack about 2,000,000 male workers of 15 to 65 years of age, or about one-sixth of the working population, M. Lucien March, treasurer of La Societe francaise d'Eugenique, told the Second International Congress of Eugenics here today.

"As a result of the War, the France of 1914 has lost 1,400,000 of her inhabitants in the prime of life, most of them fit for producing children," he said. "Also among the survivors of the fighters of the Great War, a certain part of the 800,000 total invalids will never be able to give birth to strong healthy children, either because they are no longer capable of marrying, or because they are affected with tuberculosis or other constitutional maladies."

"To these direct losses must be added the loss of births. Before the War, the number of living births balanced with a slight excess the number of deaths; the annual number was about 750,000. During the six years from 1914 to 1919 inclusive, the deficit reached 400,000 births which ought to have survived normally, and which were lost owing to the War.

"On the other hand, deaths in the civil population have been more numerous than formerly, so that 400,000 more deaths are added to the 1,400,000 unborn and to the 1,400,000 soldiers killed in war, giving a total of more than 2,000,000, taking into consideration possible repetition and immigration.

"As the preliminary results of the 1921 census indicate, regained Alsace-Lorraine can not nearly compensate for this population loss."

Many young men rightly wished to wait for the end of the war before. Marrying, M. March expalined. This resulted in the large loss of population but it also caused a recrudescence of marriages in 1919 and 1920. This same phenomenon has been observed after all wars and it is easily explained, he said.

has been observed after all wars and it is easily explained, he said. "But in spite of this the deficit is an important fact in our country and in Belgium, while the population of Great Britain has increased by 1,300,00 during the same time," he said. "That of Germany has hardly diminished and if it has diminished at all, we are still ignorant of it. We know that in Prussia the number of deaths has not fallen below the number of births."

"Imagine the state of the French population in fifeen years, At that time there will be lacking, taking account of the mortality, 500,000 young men of the ages of 15 to 21 years, a loss which must be added to the 1,400,000 men of 18 to 50 years of age killed during the war, and who would then be 33 to 65 years old, as well as the 500,000 young men of the same ages who have died in the civil population in excess of the normal mortality. In all, about 2,000,000 individuals will be missing from the male population of 15 to 65 years."

"In 1935 one-sixth of those whose work must furnish the principal source of income of the nation will be lacking. In spite of the restoration of Alsace-Lorraine, which brings us 400,000 adults of 15 to 65 years but which also demands Workers for its fields and iron foundries, it is certain that French production "ill be deprived of an important part of its active forces and that the economic life of the country will languish for many years if energetic measures are not taken without delay to ward off the threatening deficit."

"Without doubt, one might temporarily make appeal to foreign workers. Assimilable populations, however, can only furnish a small part. It will be necessary to have recourse to unassimilable races very different from ours, and which will furnish quickly the undesirable elements. " "The deficit of masculine workers has caused the more general employment of women. But the women who work cannot be fruitful mothers. Feminine work will only be a short-lived mitigation."

(Editors: This is the second of the series of astronomical features that will come to you in the Bulletin.)

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<u>NEWS OF THE STARS</u> <u>Why Stars Twinkle</u> By Isabel M. Lewis, of the U. S. Naval Observatory. (Science Service)

The remarkable steadiness of the light of the brillant white star Vega when seen near the zenith in the early evening hours of September as contrasted with the twinkling and flashing of the bright reddish star Arcturus close to the western horizon at the same time illustrates how great is the effect of the refraction of light by the earth's atmosphere upon the general appearance of the stars. If the conditions were reversed, that is if Acturus were overhead and if Vega were near the horizon, Arcturus would shine steadily and Vega would scintillate and flash.

The twinkling of a star is produced by the variable refraction of its light by air of uneven density and by interference of rays of light from the star following, slightly different paths. As a result of this irregular refraction we see the light of the star concentrated continually at slightly different points, that is the star twinkles and through interference of light rays, one color is temporarily obliterated and another intensified. For instance, the green ray may be blotted out for the moment and the red ray strengthened so that the quality of the light received from the star varies continusously to a slight degree. A star near the horizon, where refraction effects are greatest owing to the highly variable density and unsteadiness of the air close to the surface of the earth, twinkles continually and often flashes light of different colors. On the other hand there is practically no refraction of the light of a star lying near the zenith and consequently no twinkling. The rays then enter the atmosphere in a direction perpendicular to the surface without being bent from their course and so we see none of the effects produced by refraction. Vega now shines steadily in the Zenith without twinkling or flash of color because its light does not suffer refraction in this position while low in the western sky Arcturus scientillates and sparkles with occasional gleams of green or reddish light because its rays are now being strongly refracted by the earth's atmosphere. The same atmospheric effect can be observed, of course, with all stars but it is most noticeable for the brillant and highly luminous first-magnitude stars. In the telescope this scintillation and flashing of light of different colors is more pronounced, especially for bright stars, and at times very troublesome since the stars dance up and down as well as twinkle and. flash. On nights when the air is particularly unsteady these disturbing atmospheric effects are the despair of the astronomer striving to make accurate determinations of star positions.

DEDICATE MEMORIAL TO ORTON, EXPLORER OF SOUTH ALERICA.

(By Science Service)

On the island of Esteves, in Lake Titicaca, Peru, a memorial designed in the style of the ancient Incas is to be dedicated at the grave of James Orton, explorer and scientist. These ceremonies that will be participated in by representatives from Peru, Bolivia and the United States will be held on Sunday, Sept. 25, the forty-fourth anniversary of Orton's death which occurred while he was returning under terrible hardships from a trip of exploration. The monument was erected by the alumnae of Vassar, where Orton was professor of natural history. Prof. Orton made three trips of scientific exploration to the Andes and

Prof. Orton made three trips of scientific exploration to the Andes and Amazon regions of South America which brought to light many fundamental facts of natural history and geography and which added to the collections of many American Museums. FLYING SPARKS TELL CARBON CONTENT OF STEEL

(By Science Service)

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Release Saturday, September 24.

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Indianapolis, Indiana, September 23,- The sparks that fly from the wheel of the scissors grinder have been developed into a delicate instrument for determining the carbon content of steel.

At the third annual convention of the American Society for Steel Treating here this afternoon, D. H. Stacks, consulting metallurgical engineer of West Hartford, Conn. announced that he had succeeded in using the fireworks from a fast revolving grinding wheel for analysis of steel.

"When a piece of iron or steel is pressed against a fast revolving grinding wheel, minute particles of metal are removed and thrown into space which are observed as lines of fire and which seem to become molten and finally disappear" he explained. "In case of an almost carbonless iron these are shaped like a steel needle with the point in the direction of light and slightly tipped at the end on account of the rapid cooling effect of the atmosphere. In case the iron contains a small amount of carbon the needle-like effect is broken up with an explosion and little lines of fire dart out of what was originally the needle-like body. As the carbon increases these secondary lines of fire again explode causing further subdivisions and the action continues as the carbon increases, until all that can be observed is a mass of explosions."

"When all conditions are standardized, and by the use of known standards and with the personal equation eliminated, the inspection of steel can be successfully carried out by placing the unknown composition along with the known upon a specially designed automatic machine which will throw out two lines of fire and spark explosions simultaneously in such a manner that the carbon content of the unknown will be plainly observed. Individual determinations check on the average Within plus or minus 0.025 per cent of carbon variation from the standard combustion results."

Although it has long been known that sparks indicated in a general way the quality of the iron or steel, this new method uses them in the same way the chemist uses his test tubes and the metallurgist his microscope. It is possible in this way to get a quantitative estimation of the carbon without the difficult process of combustion.

NEV ALLOY RESISTS HEAT AND CORROSION

(By Science Service)

Release Saturday, September 24.

Indianapolis, Indiana, September 23.- The perfection of a new alloy, made of aluminum, nickel and iron, that will resist the high heat of 2375 degrees Fahrenheit without rusting was announced at the meeting of the American Society for Steel Treating here today by G. R. Brophy, metallurgical engineer, of the General Electric Company.

The new metal also retains a perfect polish after it has been placed in a concentrated sea salt solution spray at 100 degrees Fahrenheit for 100 hours. It is highly resistant to atmospheric corrosion and the action of acids except hydrochloric and sulphuric. Molten salt will not affect it, nor does molten or vaporized sulphur. WHAT A MILLION VOLTS OF ELECTRICITY MEANS TO COMMERCIAL TRANSMISSION.

## (By Science Service)

Washington, September .- The announcement of the General Electric Company that they have succeeded in transmitting a 1,000,000 volt current in their laboratory is assurance that there need be no further question about the attainment of sufficiently high voltage for power transission to any reasonable distance.

For this is higher potential than will be connercially necessary for transmission of power from any part of this country to its place of use. This is the opinion of Charles E. Oakes, electrical engineer for the Federal Power Commission, that is concerned with the large hydro-electric power projects of the country.

Large amounts of power are not likely to be transmitted across the continent from coast to coast, Mr. Oakes believes. The transmission problems will be confined to within the large areas of power producing and power using, such as the superpower zone area, and these areas will be relatively independent of each other. In fact, for many years to come, it is improbable that a voltage higher than 330,000 will be used on commercial lines.

The highest voltage line in the country is that being erected to feed San Francisco at 220,000 volts. This pioneer line will be placed into commission this year.

• A much longer line, operating at 150,000 volts is that in southern California supplying Los Angles from the Big Creek power plant on the San Joaquin River 246 miles away.

The fact it is unlikely that the million volts will be used for commercial transmission does not lessen the achievement of the General Electric Engineers. The production and transmission of the million volts will allow the more rigorous testing of insulators and other apparatus and will provide a new upper limit for experimental and research work. For five or six years the General Electric Laboratory has been using 750,000 volts in a more or less routine way to proof test ins insulators for lines of lower voltage. In some cases a million volts have been transformed and used for insulation testing, although its transmission has just been achieved recently.

Mr. Oakes explains that the amount of power that can be transmitted over a given line is increased as the square of the voltage. For this reason a seemingly small increase in voltage causes a large increase in power transmitted. Increase of voltage from 150,000 to 220,000 means a jump from 200,000 to 400,000 kilowatts, he explains. It is also interesting that a 150,000 volt line of sufficiently large diameter wire can be turned into a 200,000 volt line by changing the insulators, and this line could easily transmit 500 miles.

The great Superpower Zone plan, that will link the power using and producing areas of the east into on big system, contemplates the use of only 220,000 to 250,000 volts on its transmission lines and about half that within the area.

Power houses on the St. Lawrence River and at Niagra will send electricity at that voltage to New York and New England, and power plants at the coal mines of Pennsylvania will also feed into the system. It is likely that the use of the million volts in research will make the construction of this great proposed system practicable and easier.

Use of extremely high voltage is largely a matter of making the insulation sufficient to prevent great leakage to the ground. Loss of power to the air, through "corona" loss, which is seen as a blue glow around high-power wires at night, is another problem that is being solved more successfully. The question of protecting these high voltage lines from lightning must also receive attention but apparatus for this purpose on 220,000 lines is being developed. (Editors: These short paragraphs will either make a daily science feature or they will come in handy as fillers.)

DO YOU KNOW THAT-

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It has been calculated that dust storms in the western United States are responsible for carrying 850,000,000 tons of dust 1,440 miles every year.

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Starfish are very destructive to oysters, which they devour after opening the shells by a steady strain on the valves. The injury to the oyster beds of Rhode Island caused by starfish in one year was estimated at \$100,000.

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In Denver there is a mark, near the state Capitol, which is just one mile above sea-level.

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In the Tanana Valley, Alaska, though the rainfall is very light, crops draw ample moisture from the melting of subterranean ice for the first few years after the land is first cultivated. Eventually the ice recedes to such a depth that it no longer supplies the plants with water.

DO YOU KNOW THAT-

Most manmals have higher blood temperatures than man, while the temperature of birds runs higher yet.

It is believed that the Akkadians, the ancient inhabitants of

Babylonia, possessed a well constructed calendar as early as 6,000 B.C.

The climate of Mars is sometimes said to resemble a clear day at the top of a high mountain, and that of Venus a cloudy day in the lowlands of the tropics.

Dust from the Sahara desert is sometimes carried by storns as far as England and northern Germany.

DO YOU KNOW THAT-

The total number of insoct-eating birds in the United States is estimated at more than 4,500,000,000. Each bird may destroy as many as 100 insects a day.

Experiments made by the U.S. Bureau of Mines show that nearly onequarter of all the gasoline used by motor vehicles is wasted in incomplete combustion, on account of incorrect adjustment of the carburetor.

The Grand Bank of Newfoundland is supposed to be composed of deposits of solid matter brought from the Artic seas by icebergs, which gradually melt by contact with the warm water of the Gulf Stream. DO YOU KNOW THAT-

The "crescograph," devised by Sir J. C. Bose, makes visible the slow growth and other movements of plants, which are magnified several million times in this instrument.

In the United States there is one physician to every 720 inhabitants; in Canada one to every 1,050 inhabitants.

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The islet of Rockall is an isolated pinnacle of rock, 75 feet high; lying 260 miles west of the Hebrides in the Atlantic Ocean. Only six landings on this rock are recorded. The last was made recently by Dr. J. Charcot, the French explorer, who collected geological specimens on the isle.

House mice have a habit of following the walls of a room as they run about, and a trap placed behind a table leg or small object where mice naturally run need not be baited.

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DO YOU KNOW THAT-

The publishers of the Encyclopaedia Britannica once issued a booklet containing facsinile testimonial letters from prominent users of the work, one-tenth of whom misspelled the word "Britannica."

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The ancient Egyptians used shears with one of the blades detachable for sharpening; a useful feature that has entirely disappeared.

At the beginning of the world war the records of the British Army showed 9 cases of tetanus per 1,000 wounded. The use of anti-tetanus serun gradually reduced the ratio to 0.7 per 1,000, and among those infected the disease was of a far less fatal character than before this treatment was introduced.

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It is calculated that if all the land were washed down into the sea the entire globe would be covered with an ocean having an average depth of two miles.

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DO YOU KNOW THAT-

Foxes attack poultry only in exceptional cases, but they destroy many rabbits and mice, which are very destructive to fruit trees and crops.

Astronomers have begun to use radium paint for illuminating the cross-wires of telescopes, divisions of circles a rd verniers and details of star maps.

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The tiny drops of water which compose all clouds, except ice clouds, fall through still air at a speed of only a fraction of an inch per second.

The visits of comets to our region of space are generally of brief duration. Two years is the longest time a comet has been continuously visible through the telescope.

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