

Scientists Meet

It would be almost worth while to devote one whole number to the remarkable addresses delivered at the British Association, for to this gathering come our foremost men of science with their latest discoveries and theories, and every well-informed person should know the A B C of science up to date, says Public Opinion. At present, however, we can only give a few of the more striking expressions in the valuable papers delivered.

Mr. W. M. Ackworth, the great authority on railways, said: "Railways are a public service; it is right that they should be operated by public servants in the public interest. Unfortunately, especially in democratically organized communities, the facts have not infrequently refused to fit theories, and the public servants have been allowed or been constrained to allow the railways to be run not in the permanent interest of the community as a whole, but in the temporary interest of that portion of the community which at the moment could exert the most strenuous pressure."

He was inclined to think that the further a Government departs from autocracy and develops in the direction of democracy the less successful it was likely to be in the direct management of railways, but in both countries we must expect to see in the near future a considerable development in the executive control of railways. Here we have relied on competition, and the English lines were on the whole among the best if not actually the best in the world. "But," he continued, "competition is an instrument that is at this moment breaking in our hands."

In Anglo-Saxon democracies neither State ownership nor State control had been over-successful. The best result could be attained by the eventual control of an enlightened public opinion, but in this country, unlike others, we had no school which dealt with the transportation problem in its broad, economic, and political aspects. He appealed to some of the younger men to come forward and stop the gap and enlighten public opinion.

Professor Wm. Ridgeway, the President of the Anthropological Section, had very striking things to say to our legislators.

"Within the United Kingdom itself," he said, "there are not only different physical types, but very different ideas respecting marriage and divorce embodied in the laws regulating those fundamental institutions in England, Scotland, and Ireland. If such fundamental differences exist in that most important of social institutions they might well expect that the natural laws which differentiate one race from another may be at work within every community in the United Kingdom. Yet though the world had been ringing with the doctrine of 'natural selection' and the 'survival of the fittest' for nearly half a century no statesman ever dreamed of taking these great principles into consideration when devising any scheme of education or social reform."

"On the contrary, it was a fundamental assumption in all our educational and social reforms that all men are born with equal capacities; that there was no difference in this respect between the average child of the laborer and those sprung from many generations of middle or upper class progenitors, and it was held that all that was necessary to make the children of the working classes equal if not superior to the children of the bourgeois is the same food, the same clothing, and the same educational advantages. If the present policy of our legislation is adhered to, the moral and the physical standard of the British citizen will steadily deteriorate, for the population will gradually come to consist of the posterity of those who are themselves sprung from many generations of the most unfit. Should this unfortunately come to pass it will be the result of human pride refusing to apply to the human race the laws which inexorably regulate nature."

"Are we living on a world heated through-out by radio-thermal actions?" asked Professor John Joly. This question, one of the most interesting which has originated in the discovery that internal atomic changes may prove the source of heat, can only be answered (if it can be answered) by the facts of geological science. Assuming the case of, a highly-heated interior of the earth, he saw nothing to lead to a rejection of the view that the present loss of earth heat may be nearly or quite supplied by radium and future cooling of the earth controlled mainly by the decay of the uranium. Judging from the surface richness in radium of the earth and the present loss of terrestrial heat, it appeared not improbable that the earth has attained, or nearly attained, the final stage of cooling.

Sir Horace Plunkett's address was on Science and the Problem of Rural Life. He desired to establish the claim of agriculture to a wholly new position in the domain of science, and the claim of science to a more intelligent regard from those who apply its teaching to their industry. The problem of rural life was clamant for solution. The city captured increasingly the best elements in the country, and this determination of blood to the head became more and more a threatening system in our national life. The problem demanded proper attention. The British Association depended not upon its highest achievements in the region of pure science, but upon the degree in which it established and maintained a mutually helpful relationship between science and productive effort. Farmers were more backward in business than in technical methods. They wanted organizing, but co-operation for agriculture had a far higher aim

than immediate business advantage. Its bearing on small holdings was a most important question.

Everybody admitted that agricultural co-operation was beneficial in inverse proportion to the economic standing of the farmer, and that the isolated small holder would have a very doubtful prospect to face. Yet neither in Great Britain, where small holdings were being multiplied, nor in Ireland, where the people were on the land, but where vast numbers of them had to be resettled on new holdings, had nearly sufficient thought been given to this aspect of the question. It was a matter of immense importance to consider whether the family should be the unit in our schemes for reconstituting our rural social economy or whether it would not be sounder to treat communities as units. Otherwise they might preach co-operation, but it would not be practiced.

Discussing why our chemical industries had proved a failure, Mr. F. S. Kipping gave these reasons: (1) The unsatisfactory condition of secondary education; (2) the nature of the training which is given to chemists in our universities and other institutions; (3) the insufficiency of the time and money devoted to research in the manufacturing industries; (4) the lack of co-operation between manufacturers and men of science. "The shadow of the cypress rests upon our chemical trade, and manufacturers do not see their way to employ chemists; students are not attracted to chemistry as a profession because there are so few openings; without an ample and increasing supply of such students chemical industry must continue to decline."

ANOTHER SEA SERPENT

The "Daily News" says:—It was announced from Belfast yesterday that a sea-serpent had not merely been seen in Belfast Lough, but had actually been shot and brought ashore. Let us not give way to an unworthy scepticism. A length of thirty feet and a maximum girth of six feet fill fairly well the specification according to the average testimony of the most

celebrated observers—that is, if we discount their narratives by about 50 per cent., or admit the Belfast specimen to be rather small or immature. It is a little disturbing, though, that the veritable serpent of the sea should turn up after the careful way in which the other alleged occurrences of the monster have been discounted and explained away. The drawing made almost on the spot by Hans Egede has been shown almost conclusively to have been inspired by the sight of a monster squid of no more than orthodox dimensions—say, sixty feet from tip to tip of the long pair of tentacles. Still, in spite of popular disbelief, the sea serpent has persisted in appearing to mariners and others whom it has again and again persuaded to believe in its dreadful actuality. It has always eluded capture, and we had begun to believe that nothing but an international expedition would bring it to land. But just as the biggest fish are commonly angled for by great fishermen in vain to be lugged out by small boys using a bent pin on twine so, according to the news from Belfast, the redoubtable sea serpent has been despatched with a shot gun and brought home by a couple of fishermen. The question that remains is, "What is it?" Though it has missed by a day the sitting of the British Association, we do not doubt that it will be seen by ichthyologists and others capable of classifying it. The eyes of the world will be upon Belfast for quite twenty-four hours. When that time has passed we shall know whether a new era in the history of the sea serpent has dawned or whether the record has been broken in congers—or in canards.

THE EIGHTEENTH CENTURY

Mr. Austin Dobson, the great authority on the eighteenth century, has told Great Thoughts that he sometimes doubts whether he has been quite right in suppressing as much as he has suppressed!

"The eighteenth century, as you read of it in my books, seems entirely given up to a life of puff and patch and fan; and everyone who knows that it was a time of sham patriotism, drunkenness, and brutal sports—of cock-fighting, bull-baiting, and so forth—might say that it is an improper view of the eighteenth century as I present it. It is, however, an eighteenth century from which I have selected only the parts which I care for, which interest me, and which I find picturesque and pregnant."

A Trend of the Age

It has been engaged for some twenty years or more with ever-increasing comprehensiveness in preaching the gospel of irresponsibility. While inculcating a morality which is purely utilitarian, we have loosened all the bands of moral restraint by teaching, in practice, that if any man sin it is the fault of his circumstances, his environment. We must, as a nation, retrace our steps. We must return to the old beliefs, the old sanctions. We must restore the word 'duty' to our dictionaries and text books and 'Thou shalt not' to our decalogue. Every crime of violence of which the motive is either obscure or trivial is in itself a condemnation of the principles on which the character of the nation today and tomorrow is being trained and formed.

"By all means let us organize an efficient detective system. By all means let us study degeneracy and the means whereby it may be counteracted. But above and beyond all, let us not flinch from teaching that man is a responsible animal, with rights conditional on his respecting the rights of others, and that the life of man is a sacred thing, since man is made in the image of God. If it is the religious, not the mere ethical, spirit on which we must rely if civilization is not to relapse into cultivated barbarism."

So writes the Observer, led thereto by the Sevenoaks murder.

"We require," thinks the Observer, "a central bureau to which full information of any crime should at once be forwarded, and which should have the duty to take the case in hand without awaiting the appeal of the local police for assistance. And a main function of this bureau should be the study of criminal psychology, in order that the all-important question of motive may be scientifically studied. Rather than the deductive methods of Sherlock Holmes, we require sound inductive reasoning on a basis of Lombroso."

"It is when motives are either entirely nonexistent, so far as is known, or are of so trivial a nature that mankind instinctively feels it impossible that the awful guilt of murder can have been incurred on so small a temptation that the best detective in the world, unless he has approached the subject of crime from his psychological side, may well be baffled," adds the Observer. "It is just this kind of crime which we believe to be on the increase, and just this reason which we believe to operate in the impunity with which it is committed."

"A generation intolerant of restraint, impatient of disappointment or denial, taught to regard self-advancement in material good as the chief end of existence, deprived, to all effectual extent, of the responsibility imposed by religious belief, holds, as it may be expected to hold, human life a great deal cheaper than it has ever previously been held in Christian countries and in Christian times. It is not the burly brute, callous to suffering of men or animals, who is the most common type of murderer today. It is rather the clerical strippling, educated at the cost of the state to the point which makes him egoist supreme. Woman is

most generally his victim; for it is woman who most generally commits the unpardonable crime of thwarting his will."

WHEN PARIS IS DULL

The application of the law enforcing a weekly day of rest to the Central Markets in Paris is the final stage in the delicate matter of altering French customs by decree and Parliamentary fiat," says the Times correspondent. "Little by little the law has been adjusted to the various trades. That operation has not taken place without considerable friction and some agitation. The inconvenience, however, caused by the new state of things has been singularly exaggerated."

"Parisians have now and then discovered, with some annoyance, that the nearest post-office was closed, and that to send a telegram, they had to go a little further than usual. But they soon found out that the list of offices closed and of those kept open had not been drawn up arbitrarily, but according to a regular system to which it was easy to adapt their habits. They had the satisfaction, besides, of feeling that the measure by which they had been temporarily inconvenienced was likely to result in the lowering of the statistics of morality from consumption among some of the most sorely tried servants of the State."

"Again, foreigners in Paris may have felt some regret at seeing the traditional gaiety of the town considerably diminished on a Sunday. The aspect of the boulevard at present during the daytime on Sunday is virtually that of a provincial capital. The Paris Sunday, as far as the life and movement of the streets is concerned, is now almost as dull as the London Sunday. This may be a disappointment to some tourists, but a moment's reflection tempers their regrets with the thought that thousands of Parisians are enjoying an outing at Meudon, at Saint-Germain, or in the Forest of Montmorency."

"In the very heart of Paris, however, one vast agglomeration of workpeople had not yet satisfactorily benefited by the law. Last April the Prefect of Police signed a decree deciding that the fruit and vegetable stalls at the Central Markets should be closed on Mondays, from Sept. 7 to the first Monday in May, so as to give the market employees a weekly holiday. Middlemen and the grape-growers protest against the application of this measure. But the authorities are now used to protests of this kind."

"The activity of the Minister of Labor in the Clemenceau Cabinet, who is himself a Socialist, M. Viviani, has been largely taken up with efforts to settle disputes between masters and men over the weekly day of rest; and to secure a modus vivendi which shall satisfy all parties. Naturally the application of the law to the Central Markets is a fairly complicated business. But the employees have won their point in spite of the recalcitrant attitude of the grape-growers and the Chambers of Commerce. The firm position taken up by the Prefect of Police, backed by the Minister, was only to be expected of M. Clemenceau's Government, which, while remaining a Government of order, is also a Government of social reform."

A Great Triumph

HERE has just occurred in Paris an event unprecedented in the history of the world, says Public Opinion.

A man in Paris was talking and another man 310 miles away heard what he said. If there had been a wire stretched between them we should have—no, not understood it better, but should have been less surprised. But they were connected only by that which connects all things in the universe, the ether, and it was by means of this that they conversed. The man in Paris spoke into a receiver joined with some wires strung up the Eiffel Tower. The other man was just as far away from him as he could get to the westward, at the jumping place of France, the cape of Raz de Sein, near Brest. How the miracle was accomplished is explained, in so far as it can be explained, in the Independent, by one of the men who accomplished it.

"Nowadays inventors do not rest on their laurels. Simultaneously with the announcement of this triumph, the French naval officers who have achieved it express their intention of doubling the distance within a few months. The new Metropolitan Tower in New York, the tallest building in America, is being fitted up with apparatus for conversation with its only superior in the world, the Eiffel Tower in Paris. But our minds have been so rapidly expanded in recent years by a succession of marvels of increasing magnitude that nobody questions 'whether,' and all that is asked is 'when?' Yet this is a much more wonderful thing than the catching of the dots and dashes of artificial lightning flashes by a coherer across the ocean. The fluctuations produced in the electric current by the human voice in the transmitter of an ordinary telephone are so minute as to be unmeasurable. Still, wireless telephony is not much behind wireless telegraphy, and may overtake it."

"Both have introduced an unknown factor of incalculable value into the problems of warfare and diplomacy. The operations of the French fleet at the port of Casablanca, during the late unpleasantness in Morocco, were di-

rected day by day from the Eiffel Tower in Paris. The British battleship Indomitable, on clearing the Straits of Belle Isle, north of Newfoundland, reported directly to the Admiralty headquarters in Whitehall, London, a distance, as the ether wave flies, of 1,600 miles. Now from a circle with a radius of 1,600 miles from London covers a large and important part of the earth's surface. Any part of England's fleet in seas within this limit is under the personal command of Sir John Fisher as he sits in what Mr. Stead has dubbed 'the Conning Tower of the Empire.' What difference will it make then if all the cables to the 'tight little island' are cut by her enemies?

"This utilisation of the ether above us coincides and collaborates with the conquest of the air. Balloons capable of accommodating twenty-five passengers for a day or so pass at will over historic boundaries of hostile countries. The Wright Brothers are learning to fly in a machine so light that it can be carried about anywhere in an automobile. Two dirigible airships manoeuvre together over the city of Berlin. A Long Island hotel, in its anxiety to be up to date or ahead of it, advertises a landing stage for aeroplanes on its roof. It is no longer sufficient to put a belt of armor around a battleship; the decks must be protected from enemies in the air. A Chinese wall or chain of custom houses will no longer keep out the invader or the smuggler. The country must be roofed over to be safe."

"The interior of the earth still appears unconquerable, the greatest lacuna of our knowledge. Even the wireless waves seem to dodge it, preferring to go the long way round rather than the short way through. We have only scratched the surface so far, and can merely guess at the wealth that may lie beneath us. Something heavy we imagine from the weight of the world as a whole, perhaps a solid core of gold or platinum or radium; probably what would be much more valuable to us, unlimited stores of energy."

"Mathematicians have amused us by telling what life would be in Flatland, where only two-dimensional beings exist; where a circle would be impenetrable and the entrance of it an inconceivable miracle. Mankind have hitherto been practically living in two dimensions, but now they are getting possession of upper and outer space for the transmission of themselves and of their messages. What the coming civilization of three dimensions will be no one can conceive."

The hero of the latest experiments in wireless telephony is Lieut.-Commander Camille Tissot, of whom the Independent writes thus:

"Lieut.-Commander Tissot, of the French navy, is one of the most highly educated scientific officers of the French navy. While still a young man and in active service he took a university master's degree in the physical sciences, which subject he teaches at the French Naval School at Brest. As early as 1896, and while still ignorant of what Lodge and Marconi were doing in the same field, he was busy on the problem of wireless telegraphy, and in 1898 succeeded in establishing communication between the French coast and the Island of Ouessant, in the Atlantic, thus creating the first wireless station in France. In 1900 he provided the French men-of-war with apparatus which enabled them to communicate with one another at a distance of some sixty miles. Since then he has been continually at work in efforts to improve the methods for the measuring of sound waves. In 1902 he was awarded a prize by the French Academy of Sciences, and in 1905 the University of Paris gave him the degree, on examination, of Doctor of Sciences, *summa laude*. His most recent scientific work has been in what he calls 'Syntony,' where he has obtained remarkable results."

GROWN-UP CADDIES

"The suggestion made by Mr. Carlile, of the Church Army, that the occupation of golf caddie is one in which men of 'fair' character, temporarily or permanently out of employment, might very well be employed instead of boys, would seem to deserve consideration," says the Westminster. "It is put forward in these grounds: 'It is generally admitted that this form of employment is not a desirable one for boys, since it tends to make them dislike regular work and regular hours, and leaves them without training for any regular trade when they reach manhood. On the other hand, it seems to be admirably fitted for elderly men who are still active, and for men who have not strength or skill for regular industrial occupation.' We doubt, however, whether golfers would altogether relish the change. The youthful caddie is at times an infliction, but his attention, and skill, and humor do much to add to the pleasure of one of the most popular of pastimes. And would his supersession on the links mean that he would find his way into regular hours, or regular work, or training for a regular trade?"

It must make the railroad managers rub their eyes and wonder if they are awake with Bryan, Taft and Debs each touring the country in a special train that is being paid for with real money.

If religion paid cash dividends everybody would be seeking it.

The Law of Selection

PERHAPS the paper of most general interest at the British Association," thinks the Observer, "has been that of Professor Ridgeway, who, speaking in the Anthropological section, added one more to the many warnings recently given against the tendencies of modern socialistic legislation, which fall with especial severity on the middle class—'which in all ages has been the mainstay of every state'—at once discouraging marriage and restricting the birth-rate among the class which, from the eugenic point of view, it is most desirable to perpetuate. The lecturer could foresee, no other end than the steady deterioration of the race. 'Should this unfortunately come to pass it would be the result of human pride refusing to apply to the human race the laws which inexorably regulate all nature.'"

"The conclusion is very pessimistic, and we do not learn from the reports that Professor Ridgeway has taken much account of the fact that this process of the gradual recruiting of the middle and upper classes by the lower—and, as he would say, the less fit—has been going on during the whole course of Western civilization. It is notorious that the House of Lords is, in the heraldic sense, a modern assembly; that, in spite of every inducement which wealth and ease can offer for the perpetuation of its ranks, it is invariably tending to die out, and would die out but for the creation of new peers of middle-class, or even of lowly, origin. Yet it would be difficult to maintain seriously that on the whole the English race of today is not an improvement on what it was a century or five centuries ago."

"It is certainly vain for Professor Ridgeway to entreat us to permit the law of natural selection to have fair play in the social organism. The proposal is incompatible with everything we mean by civilization. It would mean the shutting up of hospitals and workhouses; it would encourage war and accentuate its barbarities; it would wipe out that half of the statute book which is designed to prevent oppression and cruelty; it would even render the practice of medicine an anti-social profession, as tending to keep the unfit alive to be a burden on their stronger neighbors. We have elected to depart from a state of nature and to recognize laws of superior validity to those which regulate the brute creation."

"Professor Ridgeway advises legislators to conform to the principles of the stock breeder anxious to rear the finest horses, cattle, or sheep.' But when a man breeds horses, he breeds for a particular quality—strength or swiftness. No doubt, if we set ourselves to produce a race of Marathon runners, or of prize fighters, we could do it. But what we call a high type of human being is a creature so uncertain and elusive, composed of elements so unstable and contradictory, that he could not possibly be produced to order. It would be easy enough, by the ruthless means which Professor Ridgeway seems to countenance, to improve the physique of the race enormously; but would the result of the experiment be men or only muscular brutes?"

Better a bald head than a barefaced lie.



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