

MARITIME MINING RECORD

Vol. 18,

Stellarton, N. S., March 8th., 1916.

No. 17

THE PURSUIT OF UNIFORMITY.

Whenever work has to be done, problems solved, or existing things altered, one is nearly always confronted with varying conditions of time, locality, force, temperature, speed, and so forth; and it is quite remarkable when we realise it how throughout the whole gamut of engineering we have been forced into the habit of handling our problems in terms of averages and of performing work (in the mechanical sense of the word) a little more successfully than our forefathers by dint of averaging down the resistance to something like uniformity, and then averaging up the effort in the like way. When the average condition can be secured and maintained it leads to an increase of the average itself as well as, what is indeed obvious, to the advantages inherent to uniformity.

Mr. Alfred Etehell, in a paper read before the Manchester Association of Engineers last Saturday, was at pains to illustrate these truisms by many examples from different branches of engineering, and in truth he did pretty well exhaust the subject. Taking the best known and still perhaps the most widely used form of power production, it is recognised that in a steam boiler uniformity of operation in every detail is valuable. The best efficiency is secured by keeping the pressure as steady as possible, the fires as even as practicable, and admitting the feed water as uniformly as can be secured with due regard to the duty, as well as keeping it to somewhere near the temperature of the water already in the boiler. Moreover, under these conditions the boiler will last longer and will cost less to maintain. One of the defects of superheaters, particularly those of the back-fired type, placed in the downtake flue behind Lancashire and similar boilers, is the fluctuation of temperature due to the unavoidably varying gases. This has received recognition in one or more types of superheater in which a heat reservoir of metal is contained within the tubes, or sometimes by gilled ferrules on the outside, so that the temperature of the superheated steam is equalised, enabling steam to be given to the engine more uniformly.

The engine, again, does its best work when its load is nearly uniform, and when pressure and vacuum are steady. Also, Mr. Etehell believes that it is much less liable to break down, a view which few people will challenge. In the condenser, too, the constant supply of water at or near the most suitable temperature, together with a steady running of the pumps, gives the best result. Even in the lubrication of engines and machinery, the principle of uniformity in applying the lubricant is of

the greatest possible value. It gives the best lubrication at the smallest cost and, as a corollary, with the greatest cleanliness.

Many years ago, while pressures and temperatures were still moderately low, it was realised how very sound was the compounding of steam, by reducing the fluctuations of temperature and effort in the cylinder. It seemed greater economy in fuel and a higher mechanical efficiency. Some of the difficulties with large gas engines and other internal combustion engines arose from the extremely varying conditions of pressures and temperatures in the cylinder, and there is little doubt that if these conditions can be averaged out to something more nearly approaching uniformity the large internal combustion engine will find a greater field of usefulness. The recent tendency in gas-engine design has been to increase the number of cylinders for a given power, thus securing more uniform conditions not only with regard to temperature in the cylinders, but with regard to the dynamic functions of the engine.

VARIETIES OF MEN.

There are among us today multitudes of people who have been "lame from their mother's womb." There are some who inherit a temperament like a keen east wind, and they have been maimed by the shrew which dwells in their own souls. Others inherit a disposition like a damp, heavy cloud, and something like a chilling sea-breeze holds possession of their life. Some find themselves loaded up with a temper like gunpowder, or they possess bodily passions which erupt with the violence of volcanoes. Others are born with sluggish wills, and others, again, with spirits that are shy and timid as a bird. There are souls which are born with thin and scanty emotions; the river of their affection trickles along like a stream in days of drought. And, again, there are souls which are like ships without ballast in a heavy sea, and they are tossed about with an inconstancy which makes the journey of life a continual distress. Well, all these, and many more whom I could name, have been thus lame from their mother's womb, and these unfriendly forces of heredity have driven them into defeat and confusion in every crisis of life's campaign.

WOMEN WORKERS AND THEIR LOOKS.

"Make no mistake; women do think about their looks when they drive a lorry or go the postman's round. Dress crops up in all employers' problems. Convey to the woman worker that she looks nice, and her last ounce of overtime is yours."—Daily Mail.