Carlyle depicted England looking at her been. Colonies and saying: "Here are lands and seas, spice-lands, corn-lands, timber-lands clasped by many sounding seas; wide spaces of the Maker's building, fit for the cradle of mighty nations. To me, England, has fallen the godlike task of initiating all that; of me and of my Colonies the future asks: Are you wise enough for so sublime a destiny? or, are you too foolish ?" Yes : the story of Britain's development from being the vassal, the slave of Imperial Rome, up to this day, when her disputed sovereignty is being re-established in South Africa, has been one continuous display of the spirit of Imperialism, which we believe was planted in the blood of the British races by Providence. To them it was given as they were magnificently endowed with the capacity for self-government, which is the chief requisite for the wise government of other peoples. Above all, history points to Great Britain being divinely favoured in her imperialistic expansion, because, with all her faults, the old land has ever stood for freedom and rightcousness.

PROBABILITY AND THE LAW OF AVERAGES.

At the June meeting of the Insurance Institute of Victoria, Australia, a paper on the science of probability was read by Mr. John Sutherland, M.A., A.I.A., from which we quote the following description of some interesting experiments conducted for the purpose of determining the general law of averages:

Mr. Sutherland said:

"The subject matter of this paper is a wide one. It embraces the whole fundamental principles on which the mighty fabric of modern insurance is based. In every form of insurance, fire, life, marine, accident, and so forth, the thing insured is known as a 'risk.' The calculation of the amount of risk involved in any transaction is the purpose of the science of probability, and, therefore, every form of insurance is an outcome of the applications of the doctrines of that science. In discoursing upon so wide a subject, there is an advantage and a disadvantage. The advantage lies in the fact that the matter is of broad, perennial and fundamental interest to all concerned. so that in a composite society, such as this, it should be possible to make the paper appeal to all, whereas a subject of more limited scope might interest only one section of the members. The disadvantage lies in the fact that the effort to deal with topics of general concern necessarily leads to the inclusion of matter which is commonplace to some.

The purpose of applying the laws of probability to insurance risks iss to forecast the future. That is to say, we here find the mathematician transformed into the prophet. The scientist and the seer become rolled into one, and from his labours, there results the possibility of those institutions which combine the romance of alleviating loss and sorrow with the prosaic routine of bookkeeping and annual reports.

The determination of the probability of an event may be made in two ways. Either the circumstances of the case are such that the various possibilities may be completely reviewed and weighed one against the other from a purely theoretical standpoint, as, for example, when we toss a penny and predict (since there is only a head and a tail, that iss, there are only two possibilities, each of which is equally as likely as the other) that 'heads' has one chance out of two of appearing. Or when we throw a dice with six faces, and, therefore, there are six evenly balanced passibilities, we say that the chance of throwing one is one in six. The other method of determining a probability is to gather sufficient experimental evidence of the proportion of similar cases occurring in the past, and to assume that the same proportion will occur in the future. This method of forecasting the future by the past is liable to error as far ass insurance events are concerned, by the tendency for civilization and modern improvements to progress, and thereby to render the modern case different from the ancient one, though aparently on the surface the two are similar.

"Every quotation for insurance presupposes a conviction in the mind of the underwriter that a certain average probability attends the risk which he is insuring. For example, a quotation of ros. per cent. per annum on a certain line indicates a belief in the mind of the underwriter that out of every 200 such risks about one will become a claim every year. If there were more than one claim on the average in a year for many years in succession, insolvency would result; and if there were markedly less, then an enormous dividend to shareholders would result. Whether the conviction which is thus financially expressed arises from carefully tabulated results of the past workings of the business as is the case in life assurance, or whether it arises from a rough and ready practical experience of such risks in the past, as is the case with other forms of insurance, the guiding principle is always the same.

"Prediction of the future, as based on past experience, may range from the equivalent of absolute certainty to that of a precarious hypothesis. When we say that the sun will rise to-morrow morning, we use no qualifying expression of probability. Past experience has been so abundant and so consistently uniform in this matter that we consider that we are certain of the future there. That can form no subject either for betting or for insurance. We cannot, however, say that such a man will meet with a fatal accident for certain to-morrow,, and therefore the contingency becomes an insurable one. To an omniscient being there is no probability, and if a man understood the laws of motion thoroughly enough he could predict whether a penny tossed into the air would come down "heads" or "tails" as accurately as an astronomer predicts an eclipse of the moon. Completeness of knowledge renders prediction per-But where our knowledge is limited, recourse fect. is had to a general principle of averages, and then probability comes into plty as the basis of our calculations. Though no man is wise enough to say for certain whether a particular penny will come that of 1,000 pennies, approximately 500 will come heads and 500 ails, and of 1,00,000 pennies more approximately, 500,000 will show heads and 500,000 tails.

To illustrate this point, I threw a penny 1,000 times. In the first 20, there were 9 heads and 11 tails, or a divergence of 10 per cent. from the most probable case of 10 each. In the first 200 there were