

III.

THE EFFECT OF POSITION IN USING BERNOULLI'S TABLE.

The effect of position in Bernoulli's Table is remarkable, and must always be attended to. The value of n varying with each column.

When using any of the formulæ given in school or college algebras for determining the sum of a series by the Differential Method, such as that given on page 337, of Hind's Elements of Algebra, 5th Ed., and applying it to Bernoulli's Table, the value of n must be made equal to $(n - a + 1)$ on account of the cyphers which Bernoulli's formula alone includes.

The equation then becomes

$$(1) \quad S = \frac{(n-a+1)(n-a+2)(n-a+3)(n-a+4)}{1 \cdot 2 \cdot 3 \cdot 4}$$

$$(2) \quad S = \frac{l \times n}{a}$$

EXAMPLE.—Let it be required to find from either formula the sum of 40 terms of the series

$$1 + 4 + 10 + 20 + 35 + 56 + 84 + \&c., \text{ to } \dots 9139.$$

which is the 40th term in the Bernoulli Column IV, including cyphers.

$$\text{Then from (1) } S = \frac{(40-3)(40-2)(40-1)(40-0)}{1 \cdot 2 \cdot 3 \cdot 4} = \frac{37 \times 38 \times 39 \times 40}{1 \cdot 2 \cdot 3 \cdot 4} = 91390$$

$$\text{From (2) } S = \frac{9139 \times 40}{4} = 91390.$$

Many other striking features and properties of Bernoulli's remarkable table are pointed out in the *Ars Conjectandi*, or in the MASERES translation, or are easily deduced by any one familiar with the elements of Algebra.

THE MAGNITUDE OF THE IMPOSTURE.

It will be understood why no attempt is made in this Exposition to arrive at an approximation to the extent to which the use of the artifice portrayed affects the visible record of Canadian Trade since 1878, when it is stated that the combined PROVINCIAL DIFFERENCES in the year 1883, for Cotton Goods and Iron Goods in relation to trade with Great Britain and the United States, amount to no less than \$377,000. If the signs only of these Differences be changed, the resulting sum would represent a difference in the record of the Trade, from what it now is, of \$754,000 for these two articles alone in one year.

But besides Iron Goods and Cotton Goods and Woollen Goods, there are numerous other commodities in which the recorded "Differences" between "Imports" and "Entries for Home Consumption" are very large. These figures have no relation to the "Valuator's" estimate, or to "Bonded Goods," or to "Drawbacks," or any other Custom House contingency. They are the grouped terms of a continuous Arithmetical Progression, interchangeable with United States prior Custom House entries, and interchangeable with a prior Canadian series, already successfully utilized, and interchangeable with Bernoulli's wonderful grouped figures, 170 years old. Consequently, they are fabricated figures from year to year, and mathematically related to the Custom House details of a neighbouring nation.

EADEM MUTATA RESURGO.

A STATEMENT AND CONCLUSION.

In what I have now portrayed there lies an instruction and a warning not to be disregarded.

We are brought face to face with the most far-reaching conspiracy—for it deserves no better name—history discloses.

This conspiracy has had for its object the systematic joint falsification, by a secret mathematical process, of the Annual Trade Records of two independent nations, during a time of profound peace, and in the midst of laudable commercial rivalry.

This secret process has already been jointly and successfully used in relatively distorting the Trade Records of these neighboring nations, so as to give preponderance to one of them during an international arbitration in a matter governed by treaties, and of the highest moment to the interests of the maritime portion of both nations.

As a consequence of the successful practice and continued maintenance of this conspiracy, we have now to confront and discuss serious international complications, to the detriment of good neighborhood and the promotion of ill-will. Therefore, it is necessary to present the facts fairly before the public, in order to lessen these evils; not to do so, would encourage multiplying troubles.

The necessary Annual Official Statistics of the United States in relation to the Fish Trade, during the period when these records were under the supervision and control of Dr. Edward Young, were fabricated throughout, and made