

the growing strength of national feeling among the Polish people. It is a good sign and I regard a strong national feeling as an augury for the restoration of Poland, but I think it should not be used as an argument to darken the issues of investigations as to origin. I must confess that my critic has not convinced me, but on the other hand I hope that the conviction of related ancestry will bring the Polish inhabitants of Poland and their German liberators into closer sympathy than ever—closer than when the Muscovite influence dictated the policies of Europe and rendered the King of Prussia subservient to the Czar. There seems to be no question that the German government did much in those days to help in oppressing Poland at the behest of the Muscovite autocracy; but at present Germany seems to be possessed of the best intention to give Poland home rule and to gain the confidence and friendship of the Poles.

It is true enough that the Prussian policy has in time gone by been anti-Polish, that they have tried to exterminate the Polish language and have shown themselves hostile to Polish interests and traditions. One of their methods which consisted in buying out the Polish landowners failed for the reason that the language of the growing generation was derived more from the Polish nurses in the children's nurseries than from the children's own parents, and the children of the owner of a large estate learned to speak Polish from the servants in the house and spoke it with more fluency than their own mother tongue. So it happened that the growing generations even of the German landowners became Polish.

Upon the whole we may consider the Prussian method of suppressing the Polish language a failure, and it is to be hoped the German government will not repeat its former mistake. At any rate the University of Warsaw was opened in Polish and the Poles in Europe seemed to feel confident that a new era is dawning for Poland through its restoration by the Germans at the present time. Let us hope that it will be so. I am sure that Poland will prosper under the new conditions and will develop an independent Poland not only in Polish home rule but also in Polish art and Polish literature.

## MISCELLANEOUS.

### TRANSFINITE NUMBERS.

Everybody knows and constantly uses the whole numbers 1, 2, 3, and so on; and we use the word "infinite" for something which like the above series of numbers, has no end. In fact, however large a number is we can always

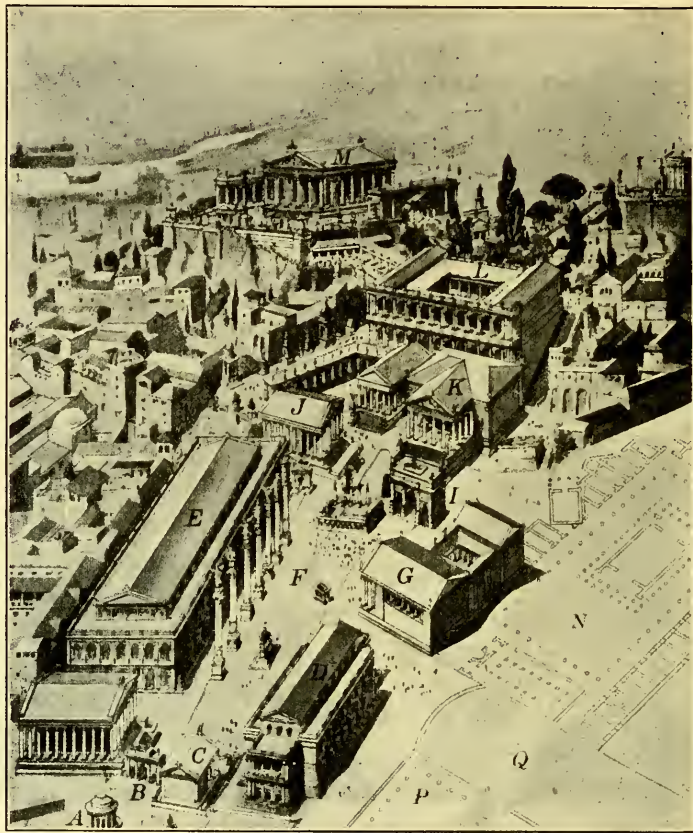
think of a still larger one, and thus we never get to an end of the above series. But the great German mathematician Georg Cantor, who is still living at Halle, first saw about 1870 that in certain branches of mathematics we must contemplate a new series of numbers each of which is greater than any of the above finite numbers, and thus has a place after all the finite numbers, just as in the spectrum a shade of red has a place after all the innumerable shades of orange though we cannot say that there is a *last* shade of orange. Cantor spent years in getting himself and others accustomed to the strange idea of infinite or "transfinite" numbers which, though each consisted of an unending set of units, could be thought of as complete wholes much as "all the points



GEORG CANTOR IN HIS PRIME.

in the line AB" denotes an infinite set and can yet be treated as a completed whole. With this end in view Cantor studied deeply the arguments of philosophers, theologians, and mathematicians about the infinite. At last, in 1895 and 1897, he succeeded in putting the results of nearly thirty years of work into a logical form which any intelligent person will not find very hard to understand. These famous essays have been translated into English by Philip E. B. Jourdain (Chicago and London: Open Court Publishing Co.). In his introduction, Mr. Jourdain has shown in detail how the new ideas grew from the work of Cantor's predecessors and in Cantor's own mind, and how these ideas must now be studied and used by all philosophers, theologians, logicians,

those interested in the foundations of the science of number and all mathematics, and those who think about the ultimate constitution of space and matter, besides all mathematicians. This book appeals to any one who wants to understand one of the main things that has revolutionized many of the methods and problems and applications of modern mathematics and philosophy of mathematics and philosophy in general, and feels sympathy with those who want to know what numbers and fractions and space and matter are.



THE ROMAN FORUM AND ITS PUBLIC BUILDINGS IN THE  
EARLY EMPIRE.

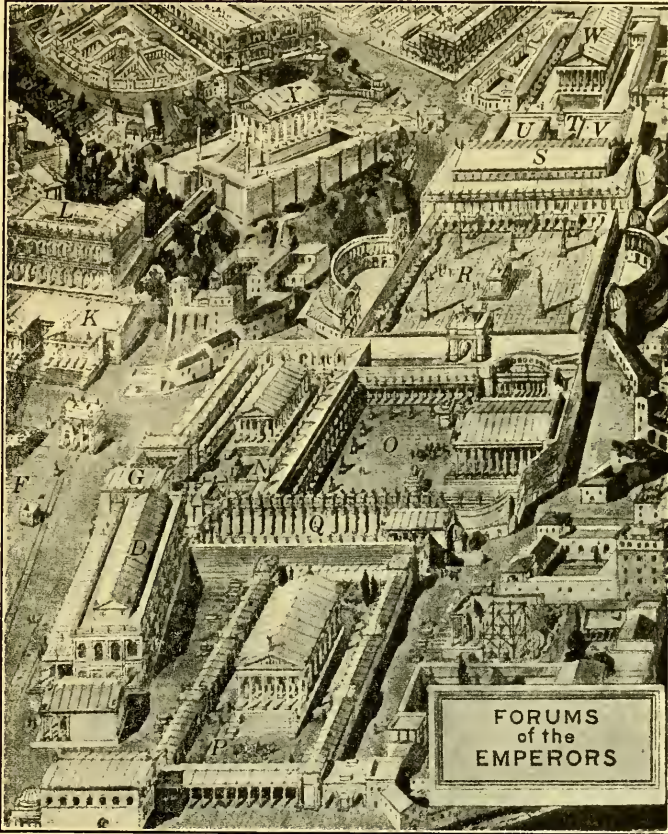
Why should mathematics interest everybody? Mere calculation is not interesting except to a few people. But even letting the mind rest on great and firm eternal truths is enchanting; living and working to find out more about them is absorbing. Mathematics is one of the few paths to truth, and the search for truth is the religion of all thinking men and women nowadays. Mathematics is one of the most living of all studies when treated historically so that we can follow the birth and development of great ideas. Thinking teachers know how attractive and indispensable it is to introduce



students to new ideas and the truths they mirror, slowly and, if possible, as the actual discoverers were.

### THE ROMAN FORUM.

Dr. Breasted's delightful textbook of ancient history, *Ancient Times, a History of the Early World* (which was reviewed extensively in the July *Open Court*) while bringing the results of the latest research with regard to



### THE FORUMS OF THE EMPERORS.

(Continuing the view on the foregoing page.)

prehistoric and early historic times to the knowledge of the high-school student, does not stop with these early periods but carries history down to the battle of Tours in the eighth century. From the time of the Roman emperors we reproduce (in a slightly enlarged form) the aspect of the Forum Romanum as he reproduces it according to the restoration of Luckenbach. It will be helpful to visitors in Rome by clearing up the chaos of the ruins in their present state. The illustrations adjoined here are explained as follows: A, Temple