saint: Well, maybe your mind is not in time, and so you make all the things behave the same way at all times. Mind, I don't say it is so; but it may be. 

saint: Is that all you know about it? Why not say the stones are made to move as they do by something like my mind?

When the disciple gets home, he consults Dr. Pearson. "Why," says Dr. Pearson, "you must not deny that the facts are really concatenated; only there is no rationality about that." "Dear me," says the disciple, "then there really is a concatenation that makes all the component accelerations of all the bodies centered through space conform to the formula that Newton, or Land, or Varignon invented?" "Well, the formula is the device of one of those men, and it conforms to the facts." "To the facts its inventor knew, and also to those he only predicted?" "As for prediction, it is a definite business." "Still the prediction and the facts predicted agree?" "Yes." "Then," says the disciple, "it appears to me that there really is in nature something extremely like action in conformity with a highly general intellectual principle." "Perhaps," I suppose Dr. Pearson would say, "but nothing in the least like rationality." "Oh," says the disciple, "I thought rationality was conformity to a widely general principle."
structure of grape sugar and to make it synthetically; he succeeded in this, but, in addition, he has made 20 other sugars that had never been known before.

As work went on in organic chemistry and the methods of working with these substances were improved, and the means of distinguishing between them became more refined, it was found that there were ever newer kinds of isomerism than had at first been observed. It is possible to have two or more substances of identical composition and of exactly the same chemical behavior, but differing from one another in only a very slight way. For example one compound will rotate the plane of polarization of a certain number of degrees to the right while the other will rotate the plane the same number of degrees, but to the left. In short they are right and left handed compounds. This physical isomerism, as it is called, can only be explained by assuming a different arrangement of the atoms in space. Since 1885 a great deal of work has been done in the development of the theories of space chemistry or stereochemistry. We are in a position now not only to determine how the atoms are linked to one another but also how they are actually grouped in space. Stereochemistry is the most attractive field of research in organic chemistry today. Prominent among the men who have contributed to this department of chemistry are Van't Hoff, Wieland, Beyer and Emil Fischer.

PROGRESS IN PHYSICAL CHEMISTRY.

During the past fifteen years the borderland between chemistry and physics has been very successfully cultivated, and a new department of chemistry has resulted. This is the department known as physical chemistry, and it deals with such subjects as thermodynamic and electrochemistry, with chemical states and chemical dynamics and with the laws of solution and electrolytic dissociation. A great deal of progress has been made in all these directions. It is especially the new theories of solution and of electrolytic dissociation that have most profoundly changed our ways of looking at chemical action. We now regard a substance in solution as in a condition analogous to the gaseous state. Like a gas, the dissolved substance exerts pressure, and this pressure, which is known as osmotic pressure, obeys, like the laws that gas pressure does, one. Great practical benefit that has resulted from the laws of solution is that it is no longer necessary to convert a substance into a gas in order to find its molecular weight; it is only necessary to dissolve it in some solvent, and from the changes which it produces in the freezing point or boiling point or vapor pressure of the solvent, to calculate the molecular weight.

The theory of electrolytic dissociation has greatly modified our ways of interpreting the ordinary reactions of analytical chemistry. We now hold that in all dilute solutions of acids, bases and salts, in short the compounds of inorganic chemistry, we have no longer the unchanged substances, but their positive and negative ions. In the act of dissolving in water the acids, bases and salts are more or less completely split into their ions, and the chemical changes that take place in these solutions are reactions between the ions. A great many facts of analytical chemistry, of electrolysis and such empirical laws as the law of thermal neutrality of salt solutions and of the constant best of neutralization of acids and bases, heretofore inexplicable, have now received a rational and natural explanation by means of this theory of electrolytic dissociation.

EDWARD H. KÄHLER.

CAMPBELL.

Many of the early editions of the 'Elements' of Euclid, among them the editio prin-
been only a short time before elevated to the
dignity of Patriarch of Jerusalem,
became on the 29th of August, 1261, Pope Ur-
ban IV., the known friend of Campanus.
He would immediately receive one of the first
copies. In the meantime there is evidence that it
was hastily given to him; for the geometri-
cal figures are not drawn all the way through
the MS., not withstanding its being an excep-
tionally handsome MS., for such a work.
It seems true, that the book must have been
published, say, within a year of Au-

gust, 1259.
If this inference be admitted, we have in the
encyclopedia 'Campanus,' considering its respectability,
and in certain its re-
markable strength, additional evidence of the
promising beginning of science which
was made in the thirteenth century until
all that sort of thing was swept away before
the flood of scholasticism; while in its lapses
into utter absurdity, though they are but
rare, we meet with another characteristic
which is marked in Petrus Peregrinus, in
Roger Bacon, and in other scientific stu-
dents of that period.

P. S. I notice that Moritz Cantor (II.
100) will have it that Urban reigned until
1261. Considering what a difference it
would have made for the history of Sicily,
for our friend Roger Bacon, and for some
famous works of literature, if he had the
slip, I perhaps, would notice.
When I can have the privilege of exam-
ing the MS. again and of consulting a
library, I think I can strengthen my proof
of the date of the work.

THE AMERICAN ASSOCIATION FOR
THE ADVANCEMENT OF SCIENCE.
The following is the list of those who
have been elected members of the American
Association for the Advancement of Science
and have completed their membership from
January 1 to April 30, 1901. The list
includes the names of twenty-six former
members and fellows, who have since January
1st been restored to the list by pay-
ment of arrearages for more than two years:

Adam, C. M., University of Chicago, Chicago, Ill.
Adam, J. B., University of Wisconsin, Madison, Wis.
Alberty, William, Professor of Psychology, University of Chicago, Chicago, III.
Alexander, Charles, Wesleyan University, Middletown, Conn.
Alexander, Charles B., Member of the National Academy of Sciences, New York, N. Y.
Alexander, Charles M., Member of the National Academy of Sciences, New York, N. Y.
Alexander, Charles M., Member of the National Academy of Sciences, New York, N. Y.
Alexander, Charles M., Member of the National Academy of Sciences, New York, N. Y.
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