ture is increased to 70 degrees; but under such circumstances the cream becomes denser. In comparative experiments like these, it is well to maintain as nearly as possible an equal temperature. It is also desirable to shut out the influence of the air. This may be done very well by means of a tin case in which 5 or more lactometers may be placed. The milk may be kept cold by cold water, and a thermometer inserted in the tin-case to indicate the temperature. [The lecturer here shewed practically how this might be done.] In comparing these two methods with each other—the one which collects the amount of cream, and the one which gives the gravity or density of milk—it has struck me that a more correct result might be obtained if two instruments were used together; one to measure the amount of cream and the other to take the density of the skimmed milk Milk skimmed and watered will give at once little cream, and show a low specific gravity; whereas, milk which was merely skimmed and not otherwise watered would give a higher specific gravity than milk in its natural condition, but would give little cream. People using both instruments would be in a position to say at once, "This milk is watered;" or, "It is otherwise good milk, but the cream has been removed." When large quantities of milk have to be supplied to work-houses or public institutions, it is very desirable to have a ready mode of testing its quality. It might be arranged that when the milk comes in, some of it should be placed in graduated tubes, and at the end of twenty-four hours, the skimmed milk could be drawn off, and a float put into it. This float might be so constructed as to give the proportion of water in the milk from 10 to 12 per cent. I purpose to make a number of analyses of milk purposely mixed with water, and to construct a set of two instruments with a view of assisting in the solution of this practical question, and enabling in a ready way the quality of milk. I believe the thing can be done with some care and trouble. When the ordinary lactometer, which measures the amount of cream in the milk, is used, practical difficulty is experienced in removing the cream. You might do it with a pipette; but unless you have a very steady hand indeed you cannot get all the cream off: at any rate, the servants in a large establishment cannot be expected to do it. I have, therefore, thought of using an instrument similar to the alcalimeter of Dr. Moore, analytical chemist of Coblentz. It is a very handy instrument, whichis frequently used for many purposes in chemical laboratories. It consists of a graduated tube divided into one hundred parts, each of seven grains, the whole of which is the hundredth part of a gallon. You will, by this means, get a proportionate part of a gallon. The milk is filled in, and then left-four-and-twenty hours. The cream rises, and can be readily let off. [The Professor gave a practical illustration with the apparatus.] The whole operation is very simple. The specimen which I have here seems to be an exceedingly good milk, it contains no less than fifteen measures of cream. I put the sample here that I might be able clearly to exhibit the process. It is rarely that you get such a large amount of cream. If in London milk you get eight or nine measures of cream, you must be satisfied: very frequently you will get only seven, and even six measures. You can see distinctly [referring to the graduated tube] the line which separates the cream from the skimmed milk. The milk is prevented from flowing out by a list of India rubber tubing, which is pressed together by a kind of clasp, which opens the tube on applying pressure to it. By this means the skimmed milk may be drawn off with the greatest ease. After that a float is used to ascertain the specific gravity. The instrument which gives the specific gravity might be so constructed as at once to indicate ten, twenty, forty, or fifty per cent. of water in the milk. By means of this arrangement you get an idea of the quality of the skimmed milk, and are able to ascertain whether or not it is poor and thin; and you also measure off the quantity of cream. I am at present endeavouring to ascertain whether the cream is of anything like uniform composition when gathered in this way. If it be so, we might thus form an idea of the amount of butter which can be produced by a given quantity of milk; and in large dairy establishments which cannot be superintended by the owner, very great services might, I think, be rendered by enabling him to ascertain at once what amount of butter he might fairly expect from his dairywoman. There is another description of lactometer, or milk-tester, as it is called, which is simply a graduated cylinder, by which the milk is kept from the influence of the atmosphere, and which in other respects resembles these graduated tubes. In all ordinary tubes in which the graduation begins at the top there is this practical inconvenience, that the skimmed milk connot be removed by such a simple arrangement as that which I have described. I have lately directed my attention to the construction of a good milk-tester. There are various things to be taken into account, which I am engaged in investigating. For instance, I am endeavouring to ascertain whether the quantity of cream which is thrown off in a small-bore tube is larger or smaller than that thrown off in a large-bore tube—whether, in fact, size makes any appreciable difference in the volume. So far as I have gone I have not found any great difference in the volume of cream which is thrown up in graduated tubes of different diameter. Thus far, the indications are favourable; and I hope, at no very remote period, with the assistance of Mr. Griffin, the manufacturer of chemical apparatus, to produce a practically useful set