

lation and decomposition throughout the body. This hypothesis rests upon a broad basis of circumstantial evidence derived both from physiological and pathological sources. Flaten has performed a series of experiments to ascertain directly whether stimulation of the retina by light really exerts any appreciable influence on the chemical change going on in the system (*Pflueyer's Archiv*, xi., 4 and 5). Rabbits were made to breathe pure oxygen instead of atmospheric air; the carbonic acid given off from their lungs was absorbed by a solution of potash, and quantitatively determined. Light was admitted to, and excluded from their eyes, during alternate periods of 30 minutes; the proportions of oxygen absorbed, and of carbonic acid given off during the intervals of illumination, being compared with those absorbed and given off during the intervals of darkness. The ratio as regards the oxygen proved to be 116:100; as regards the carbonic acid 114:100 thus confirming the results long ago obtained by Moleschott with frogs—results vitiated by the untrustworthy methods of investigation he employed.

Oil as Fuel.—At a recent meeting of the scientific and Mechanical Society at Manchester, an interesting paper on the use of oil for fuel was read, from which we take the following:

In experiments as to the comparative value of coal and oil for the production of heat, a quantity of oil weighing less than five pounds was mixed with water in the manner proposed for us, in a suitable apparatus, and without the aid of artificial draft burnt for fifteen minutes with a flame 34 inches high and 25 wide; a superiority over a similar weight of coal which is self-evident.

We have therefore, not only a cheap, but, including foreign sources, as great a supply of fuel in oil as in the stone coal; occupying in transportation less space and more easily handled.

A further, not sufficiently prized, advantage in the use of oil is, that a more constant heat can be maintained, as with additional fresh coal to a fire there is a very considerable and rapid diminution of heat. Secondly being more easily controlled, a single man can mind quite a number of boilers, thereby lessening the present large force necessary. Thirdly, as a great advantage to steamships as preserving an equal calorific power, with much less weight.

Cheery People.—O, the comfort of them! There is but one thing like them—that is sunshine. It is the fashion to state the comparison the other end foremost, *i. e.*, to flatter the cheery by comparing them to the sun. I think it is the best way of praising the sunshine to say that it is almost as bright and inspiring as the presence of cheery people.

That the cheery people are brighter and and better even than sunshine is very easily proved; for who has not seen a cheery person make a room and a day bright in spite of the sun's not shining at all—in spite of the clouds, and rain, and cold, all doing their very best to make it dismal? Therefore, I say, the fair way is to compare the sun to cheery people, and not cheery people to the sun. However, whichever way we state the comparison, it is a true and good one; and neither the cheery people nor the sun need take offence. In fact, I believe they will always be such good friends, and work so steadily together for the same ends, that there is no danger of either grudging the other the credit of what has been done. The more you think of it, the more you see how wonderfully alike the two are in the operation on the world. The sun on the fields makes things grow—fruits, and flowers, and grains; the cheery person in the house makes everybody do his best—makes the one who can sing feel like singing, and the one who has an ugly, hard job of work to do, feel like shouldering it bravely and having it over with. And the music, and mirth, and work in the house, are they not like the flowers and fruits, and grains in the fields?

The sun makes everybody glad. Even the animals run and leap, and seem more joyous when it shines out; and no human being can be so cross-gained or so ill; that he doesn't brighten up a little when a great broad, warm sunbeam streams over him and plays on his face. It is just so with a cheery person. His simple presence makes even animals happier. Dogs know the difference between him and a surly man. When he pats them on the head and speaks to them, they jump and gambol about him just as they do in the sunshine. And when he comes into the room where people are ill, or out of sorts; or dull and moping, they brighten up, spite of themselves, just as they do when a sudden sunbeam pours in—only more so; for we often see people so ill they do not see whether the sun shines or

not; but I have never yet seen persons so cross or so ill [that the voice and face of a cheery person would not make them brighten up a little.

If there were only a sure and certain recipe for making a cheery person, how glad we would all be to try it! How thankful we would all be to do good like sunshine! To cheer everybody up, and help everybody along! To have everybody's face brighten the minute we came in sight! Why, it seems to me that there cannot be in this life any pleasure half so great as this world would be. If we looked at life only from a selfish point of view, it would be worth while to be cheery persons merely because it would be such a satisfaction to have everybody so glad to live with us, even meet us on the street.

People who have done things which have made them famous, such as winning great battles or filling high offices, often have what are called 'ovations.' Hundreds of people get together and make a procession perhaps, or go into a great hall and make speeches, all to show that they recognize what the great man has done. After he is dead they build a stone monument to him, perhaps, and celebrate his birthday for a few years. Men work very hard sometimes for a whole life-time to earn a few things of his sort. But how much greater a thing it would be for a man to have every man, woman, and child in his own town know and love his face because it was full of kindly good cheer! Such a man has a perpetual 'ovation,' year in and year out, whenever he walks on the street, whenever he enters a friend's house.

'I jist likes to let her in at the door,' said an Irish servant one day of a woman I know whose face was always cheery and bright, the face of her does one good, shure!—*St. Nicolas*.

Great Cyclopedias of the World.—The most voluminous cyclopedias in the English language is that of Abraham Rees (1803-1819), republished, with some additions, at Philadelphia (1810-1824), in forty-one large quarto volumes, besides six volumes of maps, and engravings. This was one of the most costly enterprises ever undertaken by any American publisher; and considering the comparatively small number of book-buyers at the period, it is not strange that it was ruinous to those who undertook it, and that it was finally disposed of by lottery. Recent cyclopedists wisely restrict themselves within much narrower limits. The following is an approximation to the quantity of matter contained in the principal cyclopedias in English which are now before the public:

Rees's Cyclopaedia.....	41 vols. 4to,	40,000,000 words
Knight's English Cyclopaedia.....	24 " "	26,000,000 "
Encyclopedia Metropolitana.....	25 " "	25,000,000 "
Encyclopedia Britannica.....	21 " "	21,000,000 "
Appleton's American Cyclopaedia.....	16 " 8vo,	13,000,000 "
Johnson's New Universal Cyclo-		
paedia	4 " "	12,000,000 "
Chamber's Cyclopaedia.....	10 " "	10,000,000 "
Zell's Popular Cyclopaedia.....	2 " 4to,	7,000,000 "

—*The Galaxy for July.*

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