and has a definite function in nutrition. Besides these, water and certain salts are essential in nutrition, although in the strict sense of the term, are not foods. These groups are:

1. Carbohydrates.
2. Proteids.
3. Fats.

The carbohydrates, such as the sugars and starches, are fuel, and supply their latent energy to the body when burned in the tissues, just as wood, another carbohydrate, yields up its energy when burned in an engine. The amount of heat required to raise the temperature of one gram of water 1 degree C. is taken as the unit of heat, and is called a calorie. One gram of sugar burned will yield 4,000 calories; in other words, will raise 4,000 grams of water 1 degree C., or 40 grams from the freezing to the boiling point. Carbohydrates are completely burned in the body, no salts being left as residue to be afterwards eliminated.

The proteids, on the other hand, are tissue-formers, and contain nitrogen and sulphur, besides carbon, hydrogen and oxygen. Waste and repair of the tissues is continually going on in the body, by which proteid is broken down and eliminated as carbonic acid, water, and various nitrogenous salts. Carbohydrates or fats cannot replace proteid as tissue-formers. Anyone attempting to live on sugar only, for instance, would soon die, because the nitrogenous elements being absent, the body tissues would soon wear away. Proteid, however, can replace carbohydrates and fats as heat-producers, but if one lived on this alone the quantity of excretory salts would be so great that evil results would soon follow. The proteids include substances such as the white of egg, lean of beef, milk casein, and wheat gluten.

In animal foods, or food products, proteids are in excess, while in vegetable foods carbohydrates predominate.

Fats are also fuel principles only, and do not replace proteids at all. Their function is closely allied to that of carbohydrates, but not exactly similar. One gram of fat will yield 9,000 calories, or more than twice as much as a carbohydrate or proteid, each of which yield only 4,000 calories; it is, therefore, a very concentrated fuel. An Esquimaux requiring a large amount of heat, can eat quantities of fat which would kill the inhabitant of a more temperate climate.

Now, every diet should contain a proper proportion of these various chemical compounds, and the amount and proportion will vary with the climate, the age of the individual, and the amount of work done by him. The laborer requires more car-