k. In addition to the substances just men-
ed, milk invariably contains a certain por-
of mineral water, and it is important to
ce that this mineral matter consists es-
tially of the same materials of which the
nbustible part of bone is composed. The
of milk is rich in phosphate of lime and
phate of magnesia, or bone earth. Butter,
, milk-sugar, and mineral substances are the
ral constituents of milk. In diseased milk,
find a number of accidental matters which
not be identified by any chemical test, but
be well indentified by means of the micros-
. In diseased milk, pus, or common matter,
erally manifests itself under the microscope,
even the microscope is not sufficient in all
s to prove whether the milk is wholesome
ot, or whether it is conducive to the health
nimals or the reverse. In many instances
constituents of food, or any substances
ch have a decidedly medicinal effect; pass ra-
into the milk, and confer the medi-
l properties upon the milk which the reme-
themselves possess. Thus, if an animal
castor oil in considerable quantities, the
ative effects of the oil pass into the milk.
ouring matter, the red colour of madder, and
blue colour in indigo, the common weed
curialis amma and *polygonium aviculare*,
wise pass into the milk and colour it.
re are also, no doubt, smelling substances
h rapidly pass into and give a peculiar taste
flavour to the milk, and when these pe-
r flavouring substances are largely infused
affect the milk. Thus we know that the
ip flavour, for example, is readily imparted
e milk. Milk appears white on account of
suspended milk globules. In the measure in
h those globules separate in the shape of
, and milk becomes clearer, and acquires
culiar blueish tint, which is a very good in-
ion of the character of the milk. The less
parent it is the better; the more opaque it
e more butter it contains. And allow me
to notice that the quality of the milk is
more regulated by the amount of butter
of cheesy matter. An extensive series of
ses which I have made of milk have
ght out this fact, that whilst the proportion
seine varies but in a trifling degree, the
nt of butter or fatty matter in milk is sub-
to very great varieties indeed. If you
a glance at the tables on the wall, you
orm an idea for yourselves of the great
tions that exist in the amount of butter
a given quantity of milk is capable of
ing. Thus, in the first sample of milk you
no less than 7½ per cent of butter, in the
d 5 per cent, in the third 3¼ per cent., and
fourth only 2 per cent. I have separated
analyses from a number which I made
time ago, and I have further increased
by analysing, from month to month, dur-
e past season, the morning and evening
milk of our dairy cows, and greater variations
than those given here I have not found. These
four examples, therefore, may be safely taken as
indicating the wide range of the variations which
exist between the different constituents of milk;
the specimen of milk which is exceedingly rich in
butter is derived from a sample from the diary of
Mr. Harrison, at Foster Court. The second sample
indicates a richer butter than usual. The third
fairly represents the composition of milk of a-
verage good quality. And the fourth that of
milk of a poor quality. But they are all four
genuine milks. They are not in any way reduc-
ed abnormally; and I ascribe the great richness
of the first sample to the extreme good pasture
upon which the cows had been fed, at a season
of the year when generally, milk becomes richer
in quality, but less in quantity. In the months
of September and October, and up to November,
the quality of the milk very greatly improves,
but the quantity recedes and becomes smaller.
Whilst, however, this is true generally, it is not
so always; for if the animals are stinted in food,
they yield not only little milk, but also a poorer
milk, and that at a period of the year when they
should, and generally do, produce a richer milk.
Speaking generally, milk is richer in the fall,
and poorer in the spring of the year. But other
circumstances may influence the character of
the milk so as to produce different results. I
shall have to speak presently more in detail of
the various circumstances by which the quality
of the milk is modified; but before doing so, I
will point out the great difference in the com-
position of the milk of different animals.

COMPOSITION OF MILK OF DIFFERENT ANIMALS.

And first let me direct your attention to the
composition of the milk of herbivorous animals
—the cow, the ass, the goat, the ewe; and then
the milk of carnivous animals—the canine race,
taken as an example of the suspension of milk.
You will notice that the milk of carnivorous
animals is very much richer in all its various
constituents, more especially in *caseine*, or curd,
and also in butter. It is an extremely rich milk
and we have no food to compare with it. Solid
butcher's meat contains less real food and more
water than this description of milk. This will
explain at once the extreme difficulty we experi-
ence in bringing up a puppy dog by hand. The
fact is, that you have no food rich enough for
that purpose. Perhaps the only food available,
if you had to rear a valuable puppy by hand,
would be a highly concentrated beef tea; that is
an infusion of beef highly concentrated. No
solid food or pure flesh is sufficiently concentra-
ted to provide for the nourishment of a young
dog. It is not only the amount of curd, but
also the amount of butter, which is extremely
rich. There is another peculiarity also. It is
this: that the milk of carnivorous animals con-
tains no milk-sugar at all. Milk-sugar, however,
is very abundant in the milk of other than carni