Carliste feralo.

Funirers PDenatitnet.


AERATION.
heration in agriculture,-" as de ned by Webster, "is the exposure o al to the growthr of plants.". In chem stry it is thie act of combining with car bonic acid, and is essentinly the same
process in all cases. The atmospher process in all cases. The atmospher
consists of 76 nitrogen and 23 oxygen consists of
with about one part in 500 of carbonic acid gas, and a yery small portion of ac queous vapor. The air not only ucts a very important part in the process of ger mination but furnishos the oxygen re quired to decompose the carbonic gas
consumed by the living plant and a lare consumed by the living plant, and a large
portion of the gas itself. "It is of con soquence, therefore," says Johnson, 'that this oxygen of the mir should gain' acees to every part of the soil, and thus to all the roopts of the plant." This aceess can be facilitated by any culture or working " A square foot of earth in a solid form exposes but a sunall suyface to the action
of the air, and hence absoibs from the atmosphere bit littec'; pulverize this wass, und the surface serated, or exposed to the
action of the air is fincreased a million action of the air is increased a. million
fold, and its pogers of absorntion from fold, and its pogers of absorption from Some soils, however. without regard to their mechanical porosity of testure, have rapidity and in larger quantity than oth ers. - "Clays;', says Johinston, "absorb thore oxygen than sindy soils, antd rege table mootds or peats-urore- than-clays: sometimes derived from fall plowing on sandy soils, as well as what aration does for clayey oues. Clays, rith, or rather
poor in protoxides of iron and mamganese, absorb orygen for combining with them, while decaying vegetable matter, ${ }_{5}$ in like manner requires a large supply of ozy. gen to aid their natural decomposition.
Besides osygen and nitrogen, the soil also, as before remarked; absorbs carbonic gas from the atmosiphere, and portions of thôse various vapors of ammonia and nit ric acid, which, in the the opinion of some chemists, add largely to its fertility
The great object of culture is the tion of the soil-the putting it in a state permeable to air, heat and moisture throurgh which plants reccive the power
of growth. A deep and mellow soil will also be a moist and warm onie, and will then be best prepared to absorb the gasses benelulal and, necessary to vogetation ing dêws, assists any soil in deriving fortilizing principles from the air. 'On this subject Johnstoin remarks, that " the in Huebice of the dews and the gentle showers on' the progress of vegetation, is- not
limited to the mere supply of water to the thirsty ground, and of, those vapor scofid to the earth, but is partly due also to the power which tliey impart to the moistened soil, of extracting for itself new supplies of gaseous matter from the sur rounding atmosphere.
The term argition has alio been applied
to the change in the circulating fluids of both plants and ninuals by tho ture the air, ths the arterialization of the blood by: respiration, in warin blooded animals and spme What analayous process in the sap of plants perfo-med through the growth. :This has been explained as folmostiy carbon, and as carbon in its com mostly carbon, and as earbon in its com never taken up by the sap of plants, this
most-cssential ingredient is obtained in the form of carbonic acid gas, from whioh the erpoygon is separated by the leaver un der the action o hout, learar the-car into vegetuble fibe - That this proces is performed by the green substance of the leaves or stem, is cevident from the face that if a leaf is lruised or its vitality is destroyed; its substance is no longer the light; or absorbing carbonic gas in the light; or absorbing oxygen in the sap for the parpose of ripening fruit, or waturing vegetation, may be seen int, or fruit trees- the plum for instanco-in Which an excessive quantity of fruit colu ses a premature fall of leaves, after which owing to the loss of the organs of mina immature and worthless." This shows also, the reason, why the growth of th


## Farm work gettiug Easier.

When we were boys, and that not lon ago, a dozen implements coumpised
bout all that were constructed to lighte bout all that were constructed to nght
the labors of farmers and farmers boys The plow, harrow, hoe,' spude or shovel, scythe, cradle, sickle, rake, pitchfork, fanuing-mill, and two or three others, couprised the list to be looked to bo threshing machine that came into "our heighborhood," followed soon after by-a "putent" farming-will; and what light work the horse-rake made ; and how our backs struightened up when we got our hirst cultivator; and we might describe he wonder and delight excited at the in but our ruaders perbapsis recollect these things as well as we do, and their imayinations wiil supply the materials of the artiole we might write on this subject.
We do not remember a single estab lishment devoted exclusively to the sale of agriculturil implements twenty years ngo, and now we e suld wechon up hun-
dreds, many of them selfing tens of thousiands, and may of them hundreds of thousands of dodilars worth of farm laborsaving machines every year.
 and it would require this by one deale, print the names ouly of the things he of ers. In the last Patent Ofice Report nts, for new inachines granted durin 1854, and 171 of these, or one tenth are sit dow as acricultural implements he various departuents of manufacture Improvements are going on. at a rapid
rate, and ye can hardy-predict ts what point we shall arrive even in ten year to come. (We- hlready sow ou: grail harivest and thresh it by machinery; and yery soon the steau engine will b hitched to these implements, and to the plow and harrow bosides, and wo shai nly need to watoh these sitent bot Youner farmers and farnersi' sons, wale up and catch the spirit of this age, on
you will ere long be left in the background.


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