when used singly, is understood always to mean that substance. Acetic aldehyde, C_2H_4O, is, from the point of view of chemical composition, the first outcome of the oxidation of common—ethylic—alcohol. It resembles alcohol very closely in physical and physiological properties, being a thin, colorless fluid of pungent smell and taste; inflammable, miscible in all proportions with water, alcohol, and ether; antiseptic, irritant, and narcotic. It is not used in medicine. *Edward Curtis.*

ALDER, ALNUS.—(Brook alder; tag alder.) *Alnus* Tournef. is a genus of a dozen or more species in the family *Betulaceæ*, distributed through the north temperate zone, and extending along the mountains into the tropics. The bark and leaves are rich in tannin, and therefore strong astringents, without special character. They are used in tanning, and have numerous domestic medicinal uses, all depending upon the action of the tannin. Finely powdered, they have been found very useful by travellers for applying to chafed surfaces. The wood, deprived of the bark, makes a favorite charcoal for powder manufacture *H. H. Rusby*

ALDER, BLACK.—(Prinos winterberry.) The bark of *Ilex verticillata* Gray (fam. *Aquifoliaceæ*). (For the properties of other species of this large and interesting genus, the reader should consult *Maté*, *Holly*, and *Cassine*.) The plant under consideration is a large shrub, growing in hedges and borders of forests in the Northeastern United States, and displaying in fall and early winter slender branches densely covered with shining scarlet berries.

The bark is smooth, grayish or whitish ash-colored, and when dried for medicinal use is in "thin, slender fragments, about 1 mm. thick ($\frac{1}{25}$ inch), fragile, the outer surface brownish ash-colored, with whitish patches, and blackish dots and lines, the corky layer easily separating from the green tissue; inner surface pale greenish or yellowish; fracture short, tangentially striate; nearly inodorous, bitter, slightly astringent."

It contains tannin, resin, and an amaroid. No special physiological properties are known, but it has been used as a tonic and mild astringent The dose is 2 to 4 gm. (℥ ss to i.). *H. H. Rusby.*

ALEPPO BOIL.—(Oriental boil; Sahara chancre; Kandahar sore; Peudjet sore; Natal sore; Fr., Bouton de Biskra, Ger., Orientbeule.) Under these various titles has been described an affection endemic in certain districts of tropical and subtropical climates, the local names indicating many of the localities, chiefly in Algeria, Egypt, Syria, and Hindoostan, where it most commonly occurs. The disease is a local one, confined chiefly to the uncovered parts of the body, especially the face; the cheeks, angles of the mouth, eyelids, and alæ of the nose being the favorite seats. The scalp is never attacked, and while it may occasionally be located on the extremities, particularly the back of the hand and foot, it is rarely found on the trunk or pubes. In the vast majority of cases usually but one lesion manifests itself; but the lesions may be multiple. As many as fifty have been counted scattered over the face and body (Crocker). All who are brought within its influence are liable to the disease. It is most common in children between the second and seventh year, and in Aleppo it is considered almost as a matter of course that native children should have their "boil," few, if any, escaping.

It is more prevalent in autumn, when many insects are about, and Laveran has rather plausibly considered infection to be conveyed in this way. Others have considered the infecting agent to be contained in the water of the district, it gaining access to the body through some abrasion while washing or bathing, not by drinking the infected water. It has been definitely proven to be inoculable in both men and animals. It has not been shown, nor is there any reason for believing it to be hereditary. One attack does not protect from recurrence or fresh inoculation Recovery is the rule, but always with a more or less disfiguring cicatrix, depending upon how early treatment is instituted.

The pathology is obscure, and nothing very definite has been demonstrated; and though there is a certain amount of evidence showing it to be an infective and destructive inflammation, due to a vegetable organism, the special organism has not as yet been isolated As has been said, it is a purely local disease unaccompanied by constitutional symptoms, but having a period of incubation varying from three or four days to several months; hence it may appear, in one who passes but a few days in the district, only after he has left it and is far distant from the place of contamination.

The first thing noticed is an itching in the part to be affected; then appears a reddish spot like a mosquito bite, developing in the centre a papule, which soon becomes conical, gradually enlarging to the size of a pea or bean and remaining of a terra-cotta red, smooth, and shining for some weeks or months. Then is noticed from the centre an oozing of clear serum, which dries into a yellowish-brown crust, extremely adherent. This crust, surrounded by a red areola, gradually enlarges as the process of disintegration beneath goes on, forming itself from the serum as it exudes from beneath the edges of the crust already formed.

This process of ulceration may go on until an area of several inches in diameter is reached, but usually half an inch or an inch in diameter is the average size attained. If the scab be removed, a round ulcer is disclosed with red indurated areola and more or less irregular, sharp-cut edges, base uneven, showing numerous yellowish points of ulceration with fungating granulations scattered unevenly over the surface. Ulceration may extend into the subcutaneous tissues. The ulcer secretes a thin, sero-purulent, offensive discharge, which, if allowed to, forms the thick adherent crust. After a period of some weeks or months extension ceases, and cicatrization takes place beneath the scab, which finally drops off, leaving a more or less puckered, brown, pigmented scar, the process from beginning to end lasting from six months to a year, sometimes longer. Lymphangitis, erysipelas, and neighboring glandular enlargements are occasional complications.

The best thing in the way of treatment is to let the thing alone, preserving the scab carefully *in situ*, and allowing healing to take place under it. If the scab fall, the ulcer should be treated with the methods usual when dealing with a simple ulcer. If seen in the early "mosquito-bite stage," which is seldom, the actual cautery has been recommended. By way of prophylaxis, one should carefully look after any possible excoriations of the integument, avoiding the infected water for toilet purposes, unless previously boiled.

Charles T. Dade.

ALETRIS.—(Unicorn root; star-grass; mealy starwort; colic root. Sometimes erroneously called blazing-star.) The rhizome of *Aletris farinosa* L. (fam. *Liliaceæ*). This plant is a low, slender, erect, perennial herb, common in swamps and low lands east of the Mississippi River. It has been much used in domestic practice as an abdominal stimulant. It contains an unknown bitter principle, soluble in alcohol and somewhat in water. The use of the drug is purely empirical—in colic and rheumatism. The fluid extract is the best form of administration, and is given in doses of 0.5 to 1 c.c. (℥ viij.–xv.).

Seven other species of Aletris are known, one in the Southern States and six in Eastern Asia, but their properties have not been investigated. *H. H. Rusby.*

ALGIERS.—Algiers, the largest town and capital city of the French colony of Algeria, lies almost due south of Marseilles, upon the Mediterranean coast of Africa (lat. 36° 47′ 20″ N., long. 3° 4′ 32″ E.). The population in 1866 was 52,614. As seen from the deck of an approaching steamer, the appearance of the city is exceedingly picturesque and striking, its compact mass of dazzlingly white houses having the form of a triangle, whose base

rests upon the western shore of the bay, while its apex climbs almost to the summit of the range of hills shutting in the bay on that side, and culminates at the Kasbah, or former palace of the deys, some five hundred feet above the level of the sea.

Running along the water line of the city is a well-built quay, backed by a series of stone arches which support a wide and handsome promenade terrace, or boulevard. The Place du Gouvernement and the neighboring streets constitute, together with this quay and esplanade, the newer part of the town built by the French, and occupied by public buildings, warehouses, and the residences of some of the foreign inhabitants. Mustapha Superior, a very pretty suburb lying on the hillside east of the city, contains many villas, and is probably the most desirable place of residence for invalids intending to pass a winter at Algiers. Another suburb, lying also to the east of the town, is known as Mustapha Inferior, just beyond which, at a distance of two miles from Algiers, is situated the great Jardin d'Essai, an experimental garden under the management of the French government, wherein many varieties of palms and other tropical plants are to be seen growing in the open air. Ste. Eugenie, another suburb of Algiers, also contains villas, but of a residence in these Dr. Bennet ("Winter and Spring on the Shores of the Mediterranean") speaks unfavorably, stating that "they are decidedly objectionable, being at the extremity of the western promontory that contributes to form the bay of Algiers, and exposed, consequently, both to the northwest and northeast winds." As to that portion of the city proper, the old quarter, which climbs the hill back of the French quarter previously described, it is not for a moment to be thought of as a residence for invalids, consisting, as it does, of a compact mass of low, flat-roofed whitewashed houses, intersected by the narrow, crooked, dark, and dirty streets characteristic of an Oriental town. Picturesque, indeed, this portion of the city may justly be considered, and a ramble through its dingy streets will well repay the traveller for whom the typical scenes of Eastern life possess a fascination; but with its picturesqueness its attraction for the visitor certainly ends.

From its low latitude and its situation within the great Mediterranean basin, as well as from its proximity to the desert of Sahara, the climate of Algiers is necessarily a mild one in winter and a hot and very dry one in summer, having its rainfall confined almost exclusively to the colder months of the year, as is the case with all places lying in the subtropical region of the Old World. The greater mildness of its winter climate, as compared with that of the Genoese Riviera, is ascribed by Dr. Bennet, in large measure, to the higher temperature of the hours between sunset and sunrise, the temperature along the Riviera being lowered at night "by down-draughts from the mountains that protect it from the north, the Maritime Alps." Another element in producing this more equable temperature at Algiers is probably the fact that winds blowing from the north must pass over the warm waters of the Mediterranean before they can reach the African coast, whereas on the northern shores of this sea all such winds partake of the character of continental winds, and, notably in the case of the much-dreaded *mistral* of the Rhone valley and of the *bora* of the upper Adriatic, they are accompanied by sudden and most uncomfortable depression of the atmospheric temperature.

The following data, representing the climatic features of Algiers, have been collected from various sources: The mean annual temperature is 66.5° F., according to the writer in the Encyclopædia Britannica; 67.89° F., according to Martin and Folley, quoted by Dr. H. C. Lombard, in his "Traité de climatologie médicale"; 64.58° F., according to Angot, quoted by Dr. Julius Hann, in his "Handbuch der Klimatologie"; 69.13° F., according to the author of the article on "Climate," in the "Nouveau Dictionnaire de médecine et de chirurgie" (Jules Rochard); and, finally, about 68° F., according to Dr. Herman Weber. The mean of all these figures would give us 67.22° F. as the mean annual temperature of Algiers. On page 448 of his work above cited, Dr. Hann states as follows: "Entirely erroneous mean temperatures have hitherto [1888] been given for Algiers, which showed especially a winter temperature by far too high. The figures of our table are quoted from a recently published work by Angot, and relate to the period between 1860 and 1879." For the eight months of August, October, November, December, January, February, March, and April the figures of Dr. Hann are as follows:

Aug.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.
77°	67.46°	60.44°	54.68°	53.78°	54.68°	57.02°	61.34°

The mean absolute minimum temperature, he states (on the authority of Angot) to be 38.48° F. Deducing from the above-given figures the mean temperature of the three winter months, we find it to be 54.38° F., while that of the seven colder months of the year (October to April) is 58.48° F. The duration of the season for invalids ("Kurzeit"), according to Weber, is from November until the end of April; for this period of six months the average temperature of Algiers, calculated from these same figures, is 56.99° F. There appears to be much difference of opinion respecting the degree of variability of temperature exhibited from day to day. Thus, the writer in Eulenburg's "Encyclopädie" remarks that the changes in temperature during the course of a single day, from one day to another, and from one month to another, are considerable in their amount, and frequently sudden in their manner of occurrence (sind sehr bedeutend und fallen oft sehr plötzlich ein). Weber (*loc. cit.*) says the daily variations are from 10.8° to 14.4° F. (6° to 8° C.). Rochard (*loc. cit.*) states that the annual mean of the variation from day to day does not exceed 11.34° F. (6.3° C.), while the difference between the day and night temperatures (variations nycthémérales) is given by him at from 5.4° to 9° F. (3° to 5° C.). Lombard remarks that the former (variations diurnes) are not extreme, not exceeding 1.45° F. in winter, 2.03° F. in spring, 2.66° F. in summer, and 1.6° F. in autumn. The absolute minimum temperature observed at Algiers during a period of twenty years was 35.6° F., according to the author last quoted.

The following figures for the relative humidity are given by Dr. Hann:

Nov.	Dec.	Jan.	Feb.	March.	Winter Mean. Dec.–Feb.
68	73	73	72	69	73

The extreme figures representing this factor of climate during the whole year are given as sixteen per cent. and eighty per cent. (Mitchell, quoted by Rochard).

The annual rainfall at Algiers is about 36 inches; Lombard puts it at from 31.49 to 33.7 inches, and gives the following extreme quantities: 21.9 and 42.3 inches. As illustrating the seasonal distribution of the rainfall, the following tables, quoted by Dr. Bennet, will be of interest to the reader:

A.—Mean Rainfall at Algiers, 1839–1845.

November	5 inches.	May	1¼ inch.
December	8 "	June	0¼ "
January	6 "	July	0 "
February	5 "	August	0¼ "
March	3 "	September	1 "
April	4 "	October	2¼ inches.
Total	31 inches.	Total	5 inches.

B.—Number of Days and Nights in 1843 on which Rain Fell.

	Days.	Nights.		Days.	Nights.
November	10	10	May	3	1
December	5	2	June	2	0
January	10	7	July	0	0
February	9	7	August	0	0
March	9	6	September	2	0
April	1	2	October	3	1
Total	44	34	Total	10	2

It will be observed that the mean rainfall for October given in Table A is but little less than that for March, thus bearing out the statement made by Dr. Hann that the duration of the dry season for places lying on the Algerine coast is but five months. The average number of fair days in the course of a year at Algiers is two hundred and thirty-three. The prevailing wind for the year is the northwest, which frequently blows with great violence. The west is the rain-bearing wind, and is the one which is of commonest occurrence in the winter season. North and northeast winds are those which blow most frequently during the spring and summer months. The sirocco, taking its origin over the heated sands of the great Sahara desert, is most commonly felt at Algiers during the hot season, at which time it is greatly dreaded. This wind, blowing from the southeast, occurs somewhat less frequently during the colder months, at which season it is far less oppressive, and is more easily borne. The sirocco at Algiers is always a dry wind; it is accompanied by clouds of dust, a portion of which, consisting of extremely fine particles of sand, it brings with it from the great desert. Dust, it may be remembered, is one of the pests of the Algerine climate; in great part it is of purely local origin, the character of the soil and the heat of the sun, together with the almost constant prevalence of wind, favoring rapid evaporation of the rainfall, and the rainfall itself occuring chiefly in the form of heavy and not very protracted showers. A fall of snow at the city of Algiers itself is an extremely rare phenomenon, in the elevated country back from the coast, known as the Hauts Plateaux, snow falls quite frequently, and at times to a considerable depth. The water supply of the city of Algiers is abundant. Concerning the character of the water, the writer has no exact information; but from the absence of adverse comments in the works of the various authors consulted, he deems it probable that it possesses no deleterious qualities.

The mildness of its winter climate, together with the moderate percentage of relative humidity in the atmosphere, and the great preponderance of clear skies and of bright, sunny weather, which it enjoys at all seasons, combine to render Algiers a desirable, pleasant, and beneficial place of residence during the winter and early spring months, for invalids suffering from pulmonary phthisis and from certain other affections of the respiratory system. For such cases its climate is recommended by Lombard, Rochard, and Weber. The last-mentioned writer speaks of the climate as exercising also a beneficial influence upon chronic diarrhœas and upon the sequelæ of dysentery.* Lombard specifies chronic bronchitis, asthma, and phthisis as diseases likely to be benefited by a sojourn at Algiers, and he calls attention to the remarkable immunity from pulmonary phthisis enjoyed by the native population, as well as by the soldiers of the French army stationed in Algeria. This immunity is greater upon the seacoast than it is on the higher ground lying farther inland. The writer on Algiers in Eulenburg's "Encyclopädie" speaks, on the contrary, in very unflattering terms both of the climate of the city and of its desirability as a winter residence for invalids. He lays great stress upon the variability of the climate and its liability to sudden changes of weather, and warns all invalids who are unpleasantly affected by such changes, all asthmatics and persons subject to attacks of diarrhœa, rheumatism, and intermittent fever, that they would do well to avoid the place. How far the unfavorable comments of this writer may be justified, the writer is not in a position to know from personal experience, but, judging from the meteorological data quoted from reliable sources in the present article, and from the favorable comments made by Lombard and other writers of repute, he deems it not improbable that the contributor of the article in Eulenburg's "Encylopädie" has overestimated the unpleasant features of the Algerine climate.

Huntington Richards.

[Dr. Charles Theodore Williams, in "Aëro-Therapeutics," 1894, speaks as follows from his personal experience:

"Of the dozen consumptive patients of whom I have notes who have wintered once or oftener at Algiers, the large majority improved greatly, and number at least two cases of arrest; but I note that the greatest improvement took place where patients resided in villas with gardens, and not in hotels. In one case, where a young lady, a member of a very consumptive family, developed the disease and a considerable cavity had formed in one lung, complete contraction of the cavity took place with arrest of the disease in two winters, and the lady has since married and has resided for the last nineteen years in England without any signs or symptoms of relapse. Another lady, with well-marked tuberculosis of one lung, spent two winters in a villa at Mustapha Supérieur, with the result that the disease became arrested, and since that date she has been able to pass twelve winters in Scotland with impunity."

Strictly speaking, no moderately moist, warm marine climate like Algiers can be considered especially curative for phthisis, except on Dettweiler's general principle that phthisis can be cured in any climate where there is pure air and a freedom from dust and wind. Undoubtedly, such a climate has its value for certain cases of phthisis of low vitality and nervous irritability, and also for those patients who are unable to adapt themselves to the climatic conditions of the high resorts.

Such a climate is also valuable for patients with chronic bronchitis, and with emphysema, and for those who are in the early days of convalescing from pneumonia. *E. O. O.*]

ALHAMBRA SPRINGS.—Jefferson County, Montana

Post-Office.—Alhambra

Access.—Via Northern Pacific or Great Northern Railroad. Hotel.

These springs are located fifteen miles from Helena, at a level of 3,786 feet above the sea, the surrounding country being broken and mountainous. A dry and salubrious climate, with varied and picturesque scenery, characterizes this region. The hills and mountains are covered by different varieties of pine, fir, and cypress, while the bottoms are dotted with groves of alder, willow, mountain ash, poplar, and other trees. Many varieties of plants have been found in the neighborhood, which, it is said, have never yet been classified. Game is still abundant, consisting of grouse, pheasants, deer, elk, mountain lions, and a few bisons. The springs are situated in an angle formed by the junction of two creeks, in which mountain trout abound. They are twenty-two in number, and vary in temperature from 90° to 134° F. A complete analysis has never been made, but Dr. Stein, the proprietor, supplies the following partial qualitative analysis made by himself:

Sodium carbonate,	Lithium carbonate,
Potassium carbonate,	Sodium chloride,
Calcium carbonate.	Potassium sulphate.

One spring is said to be strongly chalybeate, while another is heavily impregnated with fluoride of calcium. We are unable to classify the waters by the above analysis. A sufficient quantity from some of the springs produces mild purgative effects in most people.

Dr. Stein states that the internal use of the waters is markedly advantageous in cases of chronic articular rheumatism, and in other disorders for which the Carlsbad waters of Bohemia have become famous. Mild attacks of albuminuria usually disappear, and even advanced cases of Bright's disease are benefited. Abundant facilities for hot and cold bathing, with a plunge and swimming bath, are provided. *James K. Crook.*

*Chronische Bronchitis, besonders mit Reizhusten. Emphysem. Ueberreste von Pneumonie und Pleuritis und Phthisis im ersten Anfang bilden das geeignete Material; auch chronische Diarrhöen und Folgezustände von Dysenterien sind geeignet (Ziemssen's Handbuch der allgemeinen Therapie, Bd. ii., S. 80).

ALHUELICAN SPRING.—Situation, west of the city of Tehuacan, capital of the district of the same name, in the state of Puebla, two and a half kilometres from Tehuacan. Transportation, by way of the Mexican Southern Railroad.

Chemical composition (Dr. F. Villaseñor):

Hydrometric degree	52°
Hydrometric degree after boiling	30°

Solids.	Gm. per Litre.
Sulphate of lime	0.0770
Sulphate of magnesia	0.2875
Carbonate of lime	0.2215
Carbonate of earthy salts	0.5890
Chloride of sodium	0.1675
Traces of iron, inorganic matters, silica, and undetermined substances, differential	0.0845
Saline residue dried at 120° C.	0.8880
Total	2.2620

Gases at 0° and at 0.76° C.

Gases.	c.c.
Carbonic acid	27.730
Oxygen	13.499
Nitrogen	36.600
Total	76.829

Uses.—The composition of these waters being similar to that of the Carlsbad waters, they have been employed in the treatment of the same conditions, and more particularly for the relief of cholelithiasis; and from time immemorial they have enjoyed a great reputation in the treatment of the latter condition. Several physicians recommend them highly, but perhaps the one who has done most to generalize their use is Dr. D. Mejia, professor of internal medicine in the Medical School of Mexico. Dr. Martinez Frey, resident practitioner in Tehuacan, prescribes them in the following manner:

From 120 to 160 gm. per dose four times a day as follows: the first, on an empty stomach, lukewarm; the second at 10 A.M.; the third at 5 P.M.; the fourth at bedtime. All these doses are to be taken in small mouthfuls, the patient furthermore being at liberty to take them at meal times as well, under certain restrictions. An excessive use of the water is to be avoided. By pursuing this method and by regulating the patient's diet, Dr. Frey has brought about many cures within periods varying from three to four months.

During the first few days the water has a purgative effect, but the system rapidly acquires tolerance for it, to such an extent indeed that in spite of its composition it serves as the drinking water of Tehuacan, where the inhabitants generally enjoy good health and are long-lived.

It appears that its prolonged use tends to produce constipation.

Among the inhabitants of Tehuacan, cholelithiasis is of rare occurrence, a circumstance which may perhaps be attributed to the fact that they never drink any other water. *N. J. Ponce de Léon.*

ALICANTE.—Spain. This city of 36,000 inhabitants lies upon the shore of the bay bearing the same name, on the eastern or Mediterranean coast of Spain, and about forty miles south of the middle point of that coast (lat. 38° 20′ N., long. 0° 30′ W.). Extending in the form of a crescent along the northern shore or head of the bay, and dominated by a rocky hill, some four hundred feet high, the town is tolerably well sheltered from the north and northwest winds, the bay being open only to the westerly winds. "The landward environs are dreary," says Baedeker; "but the distant mountains, the castle, the harbor, and the sea combine to form a memorable picture." "The view from the east mole of the harbor," continues the same authority, "with its white, flat-roofed houses, its palms, and the bare and tawny cliffs of the castle hill, has probably no parallel in Europe."

The climate is a mild and dry one, drier than the Riviera, the annual rainfall being only 16.93 inches, of which (according to Lorenz and Rothe, quoted by Dr. Weber, in Ziemssen's "Handbook of General Therapeutics") 20.7 per cent., or the extremely small quantity of 3.5 inches, falls during the winter months. The percentage of clouds prevailing in the sky of that portion of Spain in which Alicante is situated is much lower than is found in any other part of Europe, Italy and Greece included. The relative humidity of Alicante the writer has not been able to ascertain; but at Valencia, some eighty-five miles north of Alicante, the mean yearly relative humidity is 66°, and it is probably somewhat less at Alicante. The mean annual temperature is 64.4° F.; that of winter being 53.5° F. Another authority gives the mean winter temperature as 60° F. There is no mistral or dust.

The present condition of the water supply is not known to the writer; it is probably the same as when Dr. Bennet wrote of it in 1875, which consisted then of a large spring and rain water tank. The accommodations are said by Dr. Weber to be good. The wine of Alicante is famous, and, besides a large commerce, the town possesses an extensive tobacco factory, which employs four hundred Spanish girls.

Dr. Weber speaks from personal experience of a few cases of arrested phthisis without pyrexia doing well here during a sojourn of several months. When a mild, dry, and sunny climate is considered desirable for early pulmonary tuberculosis, Alicante would seem admirably to fulfil these conditions. Cases of latent scrofula, asthma, bronchorrhœa, albuminuria, and rheumatism are also said to do well here. *Edward O. Otis.*

ALIMENT.—Food or aliment is matter which, in conjunction with the air, supplies the elements necessary for the maintenance, growth, and development of the organism, and is thus the source of the power on which the vitality of the organism is dependent—*i.e.*, the source of the heat, mechanical work, and other forms of energy liberated in the body. Hence, in the broadest sense, true aliment is a mixture of food stuffs and drink, together with the air, from which comes the oxygen necessary for the oxidation of the former and by which energy is liberated. Again, physiologically considered, true aliment, especially in the animal kingdom, is to be distinguished from so-called "food" as being only that portion of the food which is either directly available for absorption, or convertible by the digestive juices of the body into soluble and more or less diffusible products, capable of being absorbed by the blood and lymph.

The food of vegetable organisms is quite different from that of animal organisms. Moreover, the nature of the processes involved is likewise quite different.[1] The vegetable organism, by a synthetical process—a building up of more complex bodies from simpler ones—derives its nourishment from the inorganic world; its cells appropriate such of the inorganic principles as are needed for its growth, and convert them under the influence of the sun's rays into organic compounds which enter into its own structure.

The animal organism, on the other hand, does not possess this power, and thus we look to the creative power of the vegetable kingdom as the source, either directly or indirectly, of the aliment of animals. Moreover, the vegetable matter which thus serves as food not only furnishes the material necessary for the growth and life of the organism, but it contains, in addition, stored up within its molecules, a certain amount of latent force derived from the solar force originally used in its construction.

Animal organisms, by a process of transformation quite the reverse of synthetical, convert the preformed animal or vegetable organic matter into allied or simpler forms, which are absorbed into their own tissues. Animal food, approximating more closely in composition with the body to be nourished by it, is perhaps more easily appropriated, and probably with less expenditure of energy, than vegetable products. Animal food, moreover, possesses stimulating properties, due, without doubt, to the crystalline nitrogenous bodies contained in muscle serum. Organic matter once entered as a part of an animal organism and applied to the purposes of life is decomposed or