

become malignant by virtue of size and position, and the secondary changes which they undergo. Cystic degeneration of the placenta may lead to abortion. Cysts of the meninges and brain may produce very serious disturbances on the part of the nervous system. Large atheromata of the scalp may cause a pressure atrophy of the underlying portions of the cranium. Cysts of the neck and respiratory tract may interfere seriously with respiration and deglutition. Cysts of the internal organs when of very large size may produce fatal results through pressure or rupture. Echinococcus cysts in the heart may give rise to extensive metastases or may cause sudden death through rupture of the heart wall. Rupture of cysts into any of the body cavities may give rise to widespread inflammations of serous surfaces. This occurs most frequently in the case of large ovarian cysts. Occasionally the mucous contents of these cysts may be spread in a thick layer over the entire peritoneum, becoming partly organized (pseudo-myxoma of peritoneum). Cysts of the liver, pancreas, and kidneys may through pressure cause complete atrophy of the parenchyma of the organ. Spontaneous fracture may follow the formation of bone cysts.

Only very general points can be given as to the diagnosis of cysts. As a rule they form circumscribed tumors, more or less movable, elastic, and fluctuating. Aspiration of the cyst contents and their chemical and microscopical examination often yield important aid in the differential diagnosis. This is especially true in the case of parasite and degeneration cysts. The location, manner of origin, character of cyst wall and lining, rate of growth, etc., are all points of diagnostic importance. The symptomatology of cysts in general is too large and complex to admit of definite generalizations, and only very general statements can be made in regard to their treatment. This is almost wholly along surgical lines, and consists either in the removal of the cyst as a whole or in its obliteration through aspiration and the excitation of reparative processes.

Aldred Scott Warthin.

DACTYLITIS. See *Hands and Fingers, etc.*

DALTONISM. See *Color Sensations.*

DAMIANA.—The leaves of several Mexican and Central American species of Turnera, especially *T. diffusa* Willd., not all of them as yet determined, perhaps not even described. The drug contains a considerable percentage of volatile oil and resin, with some tannin and an amaroid. It is therefore an aromatic bitter. That it may have some special properties in this class appears not unlikely. The unprofessional and disgusting methods of its exploitation and use have naturally repelled the interest of investigators, so that it has not fared well at their hands. Its popular use as an aphrodisiac does not appear to be justified. The dose is 1 to 4 gm. (gr. xv.-lx.).

Henry H. Rusby.

DAMMAR RESIN.—(*Resina Dammara*, Ph. G.) Resins obtained from *Agathis Dammara* Rich. (*Dammara alba* Rumph) and *A. australis* (Lamb.) Salisb. (*D. orientalis* Lambert), Order, *Coniferæ*; and also from *Hopea micrantha* and *H. splendida*; Order, *Dipterocarpaceæ*.

The *Agathis* trees are large, straight-trunked, handsome firs, from whose branches an abundance of turpentine exudes, both spontaneously and upon incision. It dries rapidly, and hardens to dense, brittle, irregular tears or masses of resin, often of large size, the surface commonly warty or mammillose. The *Hopeas* are also tall large trees, and belong in an order which yields a number of other volatile and resinous products (Borneo camphor, Gurjun balsam, Indian copal, and so forth). The above trees are all natives of the East—the Moluccas, Java, Borneo, India, etc.

Dammar comes in fine, hard, transparent yellow, or nearly white, odorless tears, of irregular shape and size, but often large. It is brittle, breaking with a brilliant, conchoidal fracture, but softens slightly in the hand, and

melts at about 120° C. Soluble in chloroform, ether, carbon disulphide, fats, and oils, but not entirely so in cold alcohol or in benzin. It is a compound of several resinous constituents—*damarylic acid* and its *hydrate*, *damaryl* and *damaryl subhydrate* (Dulk: copied from Huseman).

USES.—This resin is an ingredient of the German adhesive plaster—*Emplastrum adhesivum* (Ph. G.), of which it comprises fifty of the six hundred and fifty parts—litharge plaster, yellow wax, and resin being the others. It is harder and perhaps less irritating than common resin, but not otherwise different. It is invaluable as a basis of varnishes, etc., for which it is principally used.

Several other species of both genera yield similar resins—*D. australis* is the source of the Kauri gum of New Zealand, also extensively used in varnishes.

W. P. Bolles.

DANDELION.—*Taraxacum*. "The root of *Taraxacum officinale* Weber (fam. *Compositæ*) gathered in autumn" (U. S. P.). This well-known plant grows in the greatest profusion throughout most of the north temperate zone and is being increasingly cultivated as a food plant. Its reputation as a drug is of the most ancient character, but its professional use has steadily declined in the face of more accurate knowledge of drug action. The root is vertical, but rather crooked, mostly simple or with one or two branches parallel with and close to the parent, rarely reaching a foot in length and having the thickness of the finger. The drug more commonly has the dimensions of a lead pencil; it is brown, deeply wrinkled, light, soft and brittle. On fracture, the wood zone is seen to be small and bright-yellow, the bark whitish if carefully dried, otherwise dark. It contains numerous circles of laticiferous ducts, which, on paring the ends, glisten slightly, if the drug is of fine quality. The taste is distinctly bitter, and slightly sweetish, and a gummy consistency is appreciated upon chewing. The activity resides in the milky juice which fills these ducts. The official fluid extract is made from the dried root, but the Pharmacopœia directs that the fresh root shall be used in making the extract.

COMPOSITION.—The small amount of sugar, gum, resin, and wax-like substances, and the large amount of inulin are scarcely medicinal. The bitter principle is taraxacin. An alkaloid exists in minute amount.

Dandelion exerts no marked physiological action. It is somewhat laxative, hence depurative, and, because of a slightly increased elimination of bile, has been supposed to be a hepatic tonic. It does seem to possess slight alterative and tonic powers.

The dose of the fluid extract is 4 to 8 c.c. (fl. ʒ i.-ij.), of the extract 0.5 to 2 gm. (gr. viij.-xxx.).

Henry H. Rusby.

DARIER'S DISEASE. See *Keratosis.*

DATES.—The fruit of the date palm, *Phoenix dactylifera* L. (fam. *Palmaceæ*). It is a fine large tree, indigenous to Africa and parts of Asia, but long cultivated in many varieties in the tropical parts of the old world. Like the coconut palm, it supplies a multitude of needs to millions of people in the warmer parts of the world: the young bud is eaten as a vegetable, the older leaves supply fibres for textile purposes, a sort of wine is made from its juice, the seeds are ground up for cattle or used as "coffee," and the fruits form an important article of food. Dried, or preserved in sugar, they are exported to all parts of the world as a sweetmeat and dessert. The larger variety is the Alexandrian, the smaller the Barbary date.

They contain *glucose*, fifty or sixty per cent.; gum, pectin, etc., ten per cent.; *coumarin*, a trace. Dates are simply an article of food and luxury, with only slight laxative properties.

W. P. Bolles.

DATURA. See *Stramonium.*

DAVOS.—(Davos-Platz, Davos-Dörfli, and Wiesen.) Davos, the best-known and most frequented "high-altitude" winter station in Europe, is composed of two villages a short distance from each other—Davos-Platz and

dry air of great diathermancy, much sunshine and but little wind, resembling closely that of Colorado, with the important difference, however, that the daily average of sunshine in the latter resort is much greater than at Davos.

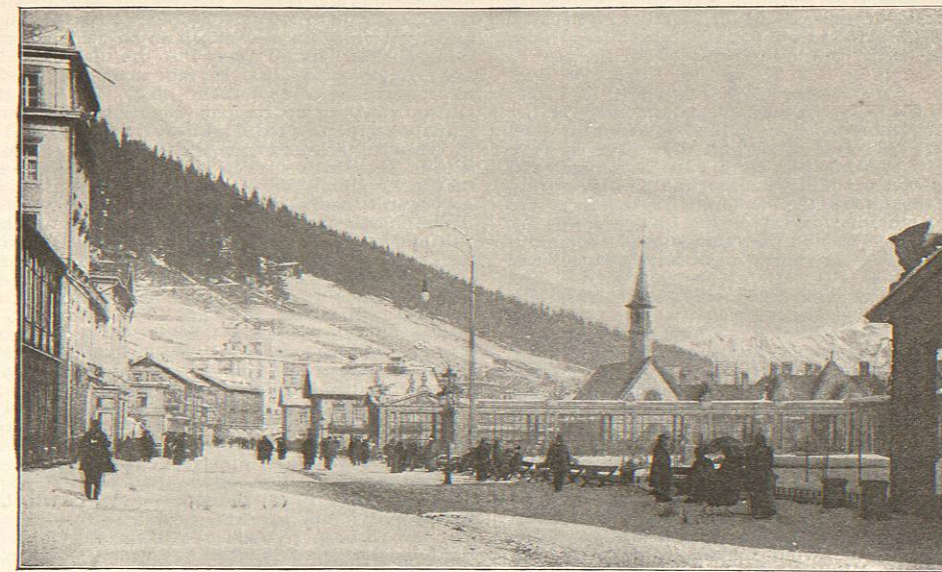


FIG. 1576.—Davos-Platz in the Winter Season

Davos-Dörfli. It is the former, Davos-Platz, which is always meant when Davos as a health resort is referred to.

Davos first became known as a health resort for consumptives through Dr. Spengler, who was a physician there, and who communicated the fact of its immunity from phthisis to the German climatologist Meyer-Ahrens. Through the publications of the latter, Dr. Unger, a consumptive, with a friend likewise afflicted, went to Davos and was cured; and through the favorable reports and experience of Drs. Spengler and Unger the advantages of this climate for pulmonary tuberculosis began to be appreciated in Europe.

It was a radical departure from the existing ideas of a suitable climate for this disease, and it seemed a strange, not to say dangerous experiment for a consumptive to pass the winter in the snows of the Alpine Mountains. As the favorable reports of those who made the venture, however, became known, the fame of the place spread, and from eight in 1865 the number of consumptives who visited it increased yearly, until in 1890 they amounted to 1,511, of whom 89 were Americans; and now it is the most popular high-altitude resort upon the Continent, the English coming next to the Germans in numbers. It is called a "winter resort," the climate at that season being considered the most favorable, although Dr. Turban, who conducts a large sanatorium there, told the writer that the seasons should make no difference and that a patient should remain continuously until the cure was effected. The climate is characterized by a cold, pure,

The snow covers the ground deeply during the winter (from three to five months), but it is a dry snow.

Davos is situated in the Canton des Grisons, Switzerland, in the upper Engadine, at an elevation of 5,115 feet above sea level. The valley of Davos is about fourteen miles long, and about half a mile wide, and runs from northeast to southwest. The mountains which shut in the valley rise from 2,000 to 3,000 feet above its bed. It is protected from the north and west winds; indeed, one of the most remarkable and characteristic features of the climate of this resort is its windlessness. It possesses all the attributes of an Alpine village—long winters; a mountain torrent, the Landwasser, traversing the valley; sparse vegetation; forests of fir and larch upon the mountain sides; high sun, and low, freezing, shade temperature. The soil is sandy and dry. The snow, which lies two or more feet deep during the winter, begins to melt about the middle of March, and patients leave about the first of April.

The average temperature for the year is 38° F., and for the seasons: Winter, 23° F.; spring, 35° F.; summer, 52° F.; autumn, 34° F.

The striking characteristic in the temperature, more or less common to all high-altitude resorts, is the great difference between that of the sun and that of the shade; in a moment one passes from winter to summer, or the reverse. Here is the comparison given by Richards in his article upon *Davos* in the previous edition of the HANDBOOK, quoted from Weber.

SUN AND SHADE TEMPERATURES AT DAVOS, 1876-77 (FAHRENHEIT SCALE).

	October.	November.	December.	January.	February.	March.	Average.
Mean maximum sun temperature	133.07°	106.12°	109.08°	108.30°	111.36°	122.32°	115.04°
Mean maximum shade temperature	60.40	36.63	39	36.07	34.55	36.46	40.51
Difference	72.67	69.49	70.08	72.23	76.81	85.86	74.53

Although the average winter temperature is so low (namely, 23° F.), yet in the sunshine one can sit in the open air with comfort or even be too warm. Moreover, in the shade and in the absence of sunshine, says Weber, low temperature produces very little discomfort at Davos as compared with that experienced in level countries, partly on account of the dryness of the air, partly also because there is very little wind in winter.

The highest or maximum temperature for the year is stated by Weber to be 75.2° F., and the lowest or minimum, -13° F. The average relative humidity is 77 per cent. for the year, 82 per cent. for winter, and 74 per cent. for spring and summer, as given by Waters, quoted by Solly. The absolute humidity, however, is very slight during the cold months, for it must be remembered that a high relative humidity at a low temperature would be a low one at a high temperature: for instance, the mean relative humidity at Davos for 1876 is given by Weber as 75.2 per cent., and the average yearly temperature is about 38° F. If now the mean temperature were assumed to be 98.4° F., the absolute humidity of the atmosphere remaining unchanged, the relative humidity would have been 11.1 per cent.

The annual rainfall and melted snowfall at Davos, as given by Waters from twenty-one years' observation, are 33.6 inches, and for the seasons: for winter, 6.1 inches; spring, 6.4 inches; summer, 11.9 inches; autumn, 9.2 inches. The average number of cloudless days for the season from October to March, inclusive, from four years' observation, compiled by Richards from Burney Yeo's tables, was 63.7; average number of fine but not cloudless days, 30.7; average number of cloudy days, 67.5; and average number of rainy or snowy days, 40. The average number of cloudless and fine days was 94.4 out of a possible 182, or about one-half. The average hourly velocity of the wind for the four seasons as given by Waters is: Winter, 1.6 miles; spring, 2.5 miles; summer, 3.4 miles; autumn, 2.4 miles. The prevailing direction of the wind is northeast.

Stillness of atmosphere, then, is another of the chief characteristics of the winter climate of Davos, although exceptions do occur and "bad winters," with many windy days, happen occasionally.

Owing to the fact that Davos is in a narrow valley shut in by high mountains, the length of the days is considerably shortened, especially in the winter. For instance, upon January 1st, the sun rises at Davos 11:03 A.M., and sets at 3 P.M., while at Denver, for comparison, it rises at 7:30 A.M., and sets at 4:37 P.M. In Colorado Springs the invalid's day in winter is given by Solly as seven hours long, while at Davos in the same season it is only about five hours long. The comparison of the amount of sunshine in Denver and Davos is given by Solly, as calculated from the weather-bureau reports and from Waters' tables, as follows:

HOURS OF ACTUAL SUNSHINE (MONTHLY MEANS).

	Winter.	Spring.	Summer.	Autumn.	Year.
Denver	188	242	290	243	240
Davos-Platz	100	166	196	126	147

At Davos, for the months of January and February, 1890, there were 267 hours of sunshine, and in 1891, 285, or about four and a half to five hours per day.

It will be seen from the above consideration of the various climatic factors of Davos that the characteristic features are a pure, dry, rarefied air, almost complete absence of wind in the winter, and a large amount of sunshine, which in such an atmosphere has great penetrating power. The disadvantages are the snow-melting period in March or April, the shortness of the winter days, and the depressing influences of a monotonous existence in a narrow Alpine valley, covered with snow. When compared with a similar high-altitude climate in Colorado, for example Colorado Springs, the advantages of the latter are apparent: there is more sunshine, and

the "invalid's day" is nearly two hours longer in winter. The fall of snow is "infrequent and scanty through the winter," and consequently there is no long period of snow melting in the spring. The vegetation is more abundant and varied, owing to the difference in latitude; and Colorado Springs and most of the other resorts are situated in broad, extended plateaus or open plains, giving one the feeling of freedom and exhilaration which comes from being able to look far away into the distance. There is, however, one grave disadvantage in many of the Colorado resorts, namely, the wind and dust. For a further comparison of the two regions the reader is referred to a valuable paper by Dr. Carl Ruedi (who resided both at Davos and at Denver), entitled "A Comparison of the Winter Health Resorts in the Alps with some Places in the Rocky Mountains of Colorado," Transactions of the American Climatological Association, vol. x., 1893-94.

The one disease for which a cure is sought in the Alpine altitudes is pulmonary tuberculosis, and to Davos comes the consumptive, not for relief but for the permanent arrest of his disease; consequently only such cases are suitable for such climatic treatment as offer a reasonable prospect of attaining this end. The following enumeration of suitable cases for the high-altitude treatment is given from the experience of various authorities: (1) Incipient cases; (2) hemorrhagic phthisis; (3) chronic pleurisy and unresolved pneumonia; (4) patients with more advanced diseases showing some consolidation but no excavation nor any serious constitutional disturbance; (5) cases of cavity, if not large and provided the disease is quiescent; (6) cases of imperfect expansion of the thorax.

The contraindications to the high altitude resorts are: (1) Advanced age; (2) the septic state, in which the disease is active and pyrexia constant; (3) double cavities with or without pyrexia; (4) cases in which there is great irritability of the nervous system; (5) diseases of the kidney, liver, or heart; (6) diabetes; (7) great loss of pulmonary tissue; (8) emphysema; (9) tuberculous laryngitis. In regard to the latter disease there is some difference of opinion. Solly, of Colorado Springs, for example, reports favorable results in its treatment in the high altitudes.

Symonds, in his charming book, "Our Life in the Swiss Highlands," thus narrates the "method of cure" at Davos; and although the account was written over twenty years ago it still remains essentially true at the present time. He says: "After a minute personal examination of the ordinary kind, your physician tells you to give up medicine, and to sit warmly clothed in the sun as long as it is shining, to eat as much as possible, to drink a fair quantity of Valtelline wine, and not to take any exercise. He comes at first to see you every day, and soon forms a more definite opinion of your capacity and constitution. Then, little by little, he allows you to walk; at first upon the level; next up-hill, until the daily walks begin to occupy from four to five hours. The one thing relied upon is air. To inhale the maximum quantity of the pure mountain air, and to imbibe the maximum quantity of the keen mountain sunlight, is the *sine qua non*."

"When I came to Davos, for example," continues the same author, "at the beginning of August, I could not climb two pairs of stairs without the greatest discomfort. At the end of September I was able to walk one thousand feet up-hill without pain and without fear of hemorrhage. This progress was maintained throughout the winter; and when I left Davos in April the physician could confirm my own sensation that the lung, which had been seriously injured, was comparatively sound again, and that its wound had been healed."

With regard to the results obtained at Davos, Turban, who conducted a sanatorium there, published in 1899 an elaborate report of 408 cases treated by him, one-half of which were in the second stage of the disease, and one-quarter each in the first and third stages. Taking the three stages together, he discharged 66.1 per cent. "absolutely or relatively cured." Of this number 48 per cent. were found—by the examination made by a physician

from one to seven years after their discharge from the sanatorium—to have remained absolutely or relatively cured. It must be borne in mind that these results were obtained by the combination of the sanatorium and high-altitude treatment.

Williams ("Aero-Therapeutics," 1894) gives the results in 247 of his own cases, whom he sent to Davos, Arosa, St. Moritz, and other high-altitude resorts. Of this number 161 were in the first stage and 86 in the second and third. A cure was effected in 40.89 per cent.; great improvement in 29.55 per cent., and improvement in 12.95 per cent.

In concluding his remarks upon the effects of the high-altitude treatment, Williams says that 75 per cent. of cases of phthisis generally are greatly improved, and in 43 per cent. the tuberculous process is more or less completely arrested. The beneficial influence of the climate is best shown, he thinks, in cases of tuberculous consolidation, in which improvement may be looked for in 87 per cent. and arrest in 57 per cent.

In a private letter received by the writer from Dr. Peters, of Davos, he says: "After eleven years' practice here in Davos, I can say that in 20 to 25 per cent. of cases a perfect cure, and in about 60 per cent. of all cases a great improvement, is obtained." "As to the treatment," he continues, "the principal thing is to spend as much time as possible outside in the pure, cold, dry, sunny air, lying, sitting, walking, skating, or tobogganing. One must sleep at least seven or eight hours, and make use of the cold shower bath and cold wet rubbings in the morning."

Davos-Platz is the chief centre for hotels and pensions and consequently for patients, although Davos-Dörfli in the winter receives the sun's rays two hours earlier, but at the same time loses them earlier.

The accommodations at Davos are abundant and excellent, consisting largely of extensive hotels, all of which are under general medical supervision. There are also several sanatoria, of which Dr. Turban's is the best known. Villas, pensions, boarding-schools for boys and girls, and other accompaniments of a populous and popular resort are to be found here. There are also good accommodations at Davos-Dörfli, which is connected with Davos-Platz by a tramway.

Davos has been accused of being overcrowded and consequently less salubrious, but for this charge there exists no ground whatever, says Williams. The drainage is excellent, and the water supply good. The food is abundant and well served. Davos is reached by rail from Paris, via Bâle and Landquart.

The attractions, for those who can safely indulge in them, are skating, tobogganing, sledging, and walking. The daily promenade upon the main street of the village is one of the features of the winter life at Davos. Here one sees the patients with faces bronzed by the sun, protecting themselves from its hot rays by parasols, when the temperature of the air is below zero.

Wiesen, which is about eleven miles below Davos-Platz in the same valley, is also a high-altitude health resort, with essentially the same climatic characteristics as Davos. It has an elevation of 4,757 feet, and instead of lying at the bottom of a valley, is situated about a thousand feet above the river bed, upon a terrace looking toward the South. Wiesen is said to have rather more sunshine than Davos; a slightly higher and more equable winter temperature, and a winter season which is several weeks or a month shorter than the winter proper at Davos. There is also an early "clearance of snow," and the snow-melting is more rapid than at Davos. Moreover, there is no morning or evening mist at Wiesen, according to Dr. Wise, in fine weather, whereas at Davos, "a perceptible mist generally covers the valley each morning." There are several good hotels at Wiesen, and it would appear to be fully as favorable as a climatic high-altitude station as Davos. As yet it has not been utilized by any large number of consumptives.

The writer has personally visited the resorts above described, but in the summer when the majority of patients

were away. He can, however, testify to the remarkable invigorating quality of the air and the intensity of the sunshine. The sensation produced by the deliciously fine, dry, cool air and the warm sunshine is quite indescribable. One feels as if he could take an unlimited amount of exercise without the least sensation of weariness. The approach to Davos, either by the Landwasser route or via Landquart, is one of great scenic attraction.

Edward O. Otis.

DEAD, DISPOSAL OF THE.—History teaches that at all times and in every country man has manifested in different ways his respect, his reverence for the memory of those he had loved in life. At all ages has the cult of the dead been consecrated by religion and by law. This universal reverence for the dead has given rise to funerary ceremonies which greatly vary according to the times and degrees of civilization of the different nations. In all these various ceremonies, however, whether the result of faith or of instinct, we can trace evidence of a general belief in future life.

Three methods have chiefly been employed for the disposal of the dead: First, Burial; second, embalming or mummification, and third, incineration or cremation.

In ancient Egypt, funeral ceremonies were attended with great pomp, amidst grand demonstrations of sorrow. The most interesting ceremony was that called "The Judgment of the Dead." Forty judges, selected among the oldest and most respectable citizens, examined minutely the acts and conduct of the dead person; if his life was pure, the body was allowed to be transported to the *Neeropolis*, otherwise it was thrown into a common "fossa" (trench). Kings themselves were submitted to this "Judgment of the Dead."

The old Hebrews buried in the ground the common people and embalmed preciously the bodies of prominent persons before burying them. According to some passage of the Bible, these bodies were also at times cremated.

The old Persians, in common with most Oriental people, looked upon a cadaver as being impure, and as they adored the elements, they could not contaminate them, either by burning the dead body, by burying it into the ground or by throwing it into water. Each town in Persia possessed beyond its walls two high stone towers, one of white stone and the other of black stone. The dead were judged by the priests, who ordered the good to the white tower and the bad to the black tower. A large number of buzzards were kept for the purpose of devouring the dead bodies and thereby preventing infection. Death was not considered as a misfortune; lamentation and crying were forbidden by law. The funeral ceremonies ended generally in a great banquet.

In ancient Greece, funeral ceremonies were attended with great pomp and religiously practised, for it was believed that without them the souls of the dead could not enter the Elysian Fields. As soon as a person was dead, a piece of money, called *δανάκη*, with which to pay the passage to eternity, was put in his mouth. The body was washed and rubbed with perfumed oil and the head crowned with flowers; the body was robed in the finest white garment; it was then exposed at the main door of the house; by the side of the bier were placed precious vases that were buried with the dead, and near the body were also placed a cake made with honey and a vase full of water, in which the friends and assistants could purify their hands. Relatives surrounded the death-bed, all in tears and deep sorrow, the women tearing their clothes and pulling out their hair. The body was either buried or cremated, for both modes of sepulture existed simultaneously among the Greeks. Socrates ordered his body to be burnt, and Plutarch speaks of the burning of the bodies of Timoleon and others. In olden times, together with the dead body were also burnt, in some instances, animals, as well as slaves and captives. Thus Achilles, at the incineration of his friend Patroclus, ordered the burning of a large number of sheep, beef, horses, and dogs, as well as twelve Trojan prisoners. Bodies that were not burnt were buried in coffins of varied shapes, and mostly