

On some Plants which cause Inflammation or Irritation of the Skin.

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PART II.

WE now deal with a number of miscellaneous plants and plant-substances which induce irritation of the skin. Literature concerning such plants, except in regard to *Rhus* (see my former paper in the *Gazette* for February, p. 111) and *Primula*, is exceedingly scarce or wanting. There is no doubt that the subject requires thorough ventilation, and then the attention of medical men will be drawn to it, and methods of prevention and palliation devised.

Rutaceæ.

Phebalium argenteum, Sm.—This has been called the “Western Australian Blister Plant,” and Dr. Alex. Morrison* has shown that it blisters the human skin if handled. It has also been suspected of poisoning stock, though no details of this are available. It probably owes its acridity to an essential oil, as do so many plants of the family to which it belongs.

Meliaceæ.

Dysoxylon Richii, C. DC. (*D. alliaceum*, Seem.), native name Maotamea, is found in several Polynesian islands. Dr. Funk, of Apia, Samoa, informs me that the sap or sawdust causes a kind of eczema on the hands, also eye inflammation, and a burning feeling in the throat.

Dysoxylon Muelleri, Benth. (“Red Bean”).—This well-known furniture wood of New South Wales has been accused as follows:—Some cabinet-makers report that after working at it for “four or five days they begin to suffer from a virulent form of influenza, accompanied by violent fits of vomiting and bleeding at the nose, while if they cut themselves in handling the timber, blood poisoning almost inevitably ensues. Remarkably enough, the more seasoned the wood is, the worse it becomes.”

It appears to me that the language of exaggeration has been here employed. So far as I can glean, the wood, and particularly the sawdust, is exceedingly irritating to some people, and it has indeed induced severe eczema, and also irritation of the mucous membrane.

Leguminosæ.

Castanospermum australe, A. Cunn. (“The Black Bean”).—This well-known furniture timber of New South Wales and Queensland has, like the Red Bean (*Dysoxylon Muelleri*), been accused of injuriously affecting the health of workmen.

**Chemist and Druggist*, 8th July, 1899, p. 63.

Myrtaceæ.

Eucalyptus maculata, Hook. (the "Spotted Gum").—In parts of Queensland, timber-getters and sawyers who handle Spotted Gum are sometimes affected with a rash, called "Spotted Gum rash." I asked a number of timber experts: "Do you know any district in which this skin complaint prevails, and can you furnish any particulars in regard to it?"

Most questionees never heard of it, but Mr. A. Vogeles, Mt. Douglas, Paterson, N.S.W., reports:—"Spotted Gum rash prevails here. Some are affected more than others. One of my neighbours, who worked with me in the bush for years, felt its influence if only working beside a Spotted Gum; to work one up was out of the question. If persisting in doing so he would itch, and afterwards break out in pimples. Every occasion he got affected more; at length he had to sell his selection on account of it."

Eucalyptus hemiphloia, F.v.M. ("White or Grey Gum").—I have heard on one occasion of this timber causing a rash in a man, or at least of a rash being attributed to this timber.

Onagraceæ.

Oenothera biennis, L. (the "Evening Primrose").—Dr. E. G. Seligmann, of London, wrote to me that the above plant produces eczema in human beings.

Araliaceæ.

Hedera Helix, L. (the common "Ivy").—I have abundantly shown in my previous paper that the Poison Ivy (*Rhus*) is worthy of its name. I enclose a statement from Mr. H. Selkirk, well known in horticultural circles in Sydney, showing that the common wall Ivy may irritate the skins of some people:—

I mentioned to you that I had heard of the ordinary ivy causing trouble, and I have verified my statement. A Mr. —, of Mosman, pruned his ivy last year, and for weeks afterwards was in the doctor's hands with his hands and arms in a very bad state. One of my own brothers suffered in a mild way after similar work, while I myself had a somewhat similar experience.

Certainly common Ivy does not affect many people, but I am collecting evidence in regard to all skin-irritant plants for the first time.

Compositæ.

Cassinia aculeata, R.Br.—This shrub is sometimes known as "Dogwood," and Dr. A. W. Finch Noyes, F.R.C.S., surgeon in charge of the Skin Department of the Melbourne and Alfred Hospitals, read a paper* before the Medical Society of Victoria on this plant, which is accredited as the cause of eczema.

Details are given of seven cases, several of which suffered only when the Dogwood was in flower, and the patient had come in contact with it by brushing through the scrub, and other ways. The symptoms indicate that minute particles of some kind, such as pollen from the flowers, or irritating

**Chemist and Druggist of Australasia*, August, 1899, p. 240.

particles from the bark, get between the clothing and the skin, and where there are loose folds of clothing in contact with parts of the skin inflammation is often produced. The eruption is often scaly, with great irritation, and a feeling described, in some cases, as if fire were running through the part. In one case, a resident of Gippsland was driven from the district twelve years ago, and six months ago returned. He had a second attack of the eruption, which was relieved when he left the district. He determined to live down his susceptibility, and went back, but returned a few weeks ago, with an eruption similar to that in previous attacks.

Mr. C. Collyer, of Brunswick, Victoria, writes to me under date 12th December, 1904:—

Referring to your notes in the *Argus* of 10th instant, mention is made to effect of *Cassinia aculeata* on the skin of human beings. Permit me, as a resident at one time and recently of Walhalla, and as a sufferer, too, from what is locally known as "mountain itch" in that place, to point out that the so-called itch is due to animalculæ from diseased or blighted specimens. The blight referred to blackens the whole shrub. I have in my own experience observed that not only myself but others have been affected similarly on passing near or through the blighted specimens, especially in mountainous Gippsland. Further, I have not seen the peculiar blackness on the lower country nor in the Otway district, nor even in stretches of Southern Gippsland, and where what we call cotton bush (dogwood) also abounds.

Last Christmas-time my eldest son and I tried to get through a dense undergrowth in the Otway Forest, mostly of young *Cassinia*, and though in bloom and passing from bloom to seed, we suffered no inconvenience whatever, whereas I could not go within twenty paces of certain places in the Walhalla district without covering my face entirely with a veil—winter or summer. Flowering-time was no worse than any other part of the year if not damp.

Our only remedy was to go to the flat country, as we called the lower ranges. Washing the face or parts affected produced intense burning, and in the eyes an extremely acute pain.

Pyrethrum (*Chrysanthemum*) *Parthenium*, Sm. ("Feather Few").—The late Rev. H. E. Thomson, of Murrumburrah, N.S.W., could never tolerate this plant, which always produced an eczematic swelling on his face. He was fond of gardening, and proximity to this plant always distressed him. He tried to resist the effects, and finally had to remove all such plants from his garden.

Erigeron linifolius, DC.—Dr. Doyle, of Newcastle, sent me specimens of *Erigeron linifolius* ("Cobblers' Pegs"), which had induced inflammation of the skin in a patient of his at Port Stephens.

Helenium autumnale, L. ("Sneezewood" of the United States).—V. K. Chestnut, in a Bulletin entitled "Thirty Poisonous Plants" (U.S. Department of Agriculture), says:—

The whole plant, especially the flower, is bitter and more or less acrid and pungent. The powdered plant causes violent sneezing when inhaled, and it is, therefore, used in medicine to produce that effect. Sheep, cattle, and horses that are unfamiliar with the plant are often poisoned by it when driven to localities where it abounds. As a rule, these animals avoid it; but it is claimed that they sometimes develop a taste for it, and are killed by eating it in large quantity. The poison exists principally in the flowers. The young plants appear to be only very slightly dangerous; in the mature ones the amount of poison varies greatly even in the same field.

Centipeda.—In New South Wales we have two common Sneezewoods, natives of low-lying land, *Centipeda* (*Myriogyne*) *orbicularis* and *C. minuta*,

which, when dry, also cause irritation of the mucous membrane. They are recorded here for completeness' sake. I have not heard of them producing serious illness.

Primulaceæ.

Primula obconica, Hance.—Dr. S. A. L. Swan records* two cases which came under his notice in Ireland in which the symptoms produced by handling this plant resembled those of acute eczema or erysipelas. The effect of this plant on human beings is now well recognised by gardeners, and references to it in horticultural literature are frequent; for example, *Gardeners' Chronicle*, 9th April, 1892, p. 469. At the same time some people are not affected by it. This is the case, however, with most plants which are irritant. It is alleged that Dr. Riehl, of Vienna, has ascertained that the irritation is caused by the tiny hairs on the leaves and stalks.—*Gardeners' Chronicle*, 4th May, 1895, p. 558.

Primula sinensis, Sabine.—Eczema of the hands and face has been caused through handling this primrose. It appears to be less virulent than *P. obconica*.—*Gardeners' Chronicle*, 12th January, 1895, p. 47; 26th January, 1895, p. 116.

After the above references were given in my paper in the "Trans. Therapeutic Society," a special work was published, viz., "Hautreizende Primeln. Untersuchungen über Entstehung, Eigenschaften und Wirkungen des Primelhautgiftes," von Prof. Dr. A. Nestler (Berlin, 1904).

The author writes, p. 7, "From experiments I made it is the secretion of the glandular hairs which causes the irritation of the skin." Further, p. 6 and 7, "At present we know fourteen forms of *P. obconica*; all have the same skin-irritating properties."

Primula obconica, Hance, and *Primula sinensis*, Lindl., are the only primulas whose skin-irritating properties are fully discussed in this work (Einleitung, Introduction p. 5).

The skin-irritating properties of *Primula sinensis* are not so strong as those of *P. obconica*, and the author has shown by experiments that *Primula Sieboldii*, Morran, and *Primula cortusoides*, L., have also skin-irritating properties caused by the secretion of the glandular hairs (p. 6).

Primula obconica, Hance, has the strongest irritating effect on the skin.

P. sinensis, Lindl., and *P. Sieboldii*, Morran, have an irritating effect on skin, but less strong than in *P. obconica*.

P. cortusoides, L., causes irritation of the skin in a very mild form.

The following species of *Primula* have no trace of an irritating action on the skin:—*P. officinalis*, L.; *P. megaræfolia*, Bour.; *P. floribunda*, Wall.; *P. auricula*, L.; *P. capitata*, Hook.; *P. farinosa*, L.; *P. japonica*, Grey; *P. hirsuta*, All.; *P. Clusiana*, Tausch.; *P. minima*, L.; *P. rosea*, Royle.

**Lancet*, 25th April, 1891, p. 960; *Pharmaceutical Journal*, 2nd May, 1891, p. 981.

The irritating matter is, in all species of *Primula* discussed, the secretion from the glandular hairs.

There is also an article: "The poisonous properties of *Primula obconica* and *P. sinensis*" in *Gardeners' Chronicle*, 6th October, 1906, p. 246.

There is a bibliography of the subject at p. 45. This work contains four illustrations, one of which, showing the effects of *Primula obconica* on the hands and forearm of a human being, I reproduce.



A Plant of *Primula obconica*.
Grown in the Botanic Gardens,
Sydney.



The effects of *P. obconica*.

I also show a photograph of a rather weak plant of *P. obconica* grown in the Botanic Gardens.

See also Daffodil-poisoning below, p. 1078.

Euphorbiaceæ.

Excecaria agollocha, L.; *Excecaria parvifolia*, Muell., Arg.—These two yield an acrid juice which is more or less volatile, and which, if it gets into the eyes, will produce temporary loss of sight and other local irritation.

Urticaceæ.

To the number of plants which cause eruptions on delicate skins, Anstruther Davidson adds *Solanum xanthii*, a common plant in California, and also the common cultivated fig. In the latter case the cause of the trouble is the minute hairs on the leaf. The fruit, being free from these, does not give rise to the eruption. The dermatitis is observed chiefly among children engaged in gathering figs; but adults with delicate skins are affected. The author states that the presence of these irritant hairs hardly accords with the accepted statement that the fig leaf formed the primitive garment of man.—(*Therap. Gaz.*, 22, 86, quoted in *Pharm. Journ.*, 4th series, viii, 335, 15/4/99.)

The irritation caused by the skin of the common edible fig is so well-known that people usually peel it before eating it; if they omit to do so, they are reminded by the irritation of the mouth.

Irritation of the hands from this cause is less common. A lady in North Sydney can never gather her crop of figs, much less handle them during the making of pickled figs, fig-jam, &c.

Coniferæ.

Thuja Douglasii, Carr.—A curious case of a woman being poisoned by handling the branches and leaves of this tree while gardening is recorded by Neudorffer in the "Centralb. f. Innere Medicin."* "The symptoms were spasmodic convulsions, dyspnœa, and coma. Other persons appear to have been more or less affected who were working at the same employment. It appears probable, therefore, that the tree, which is cultivated for ornamental purposes, contains some poisonous ingredient to which some persons are more susceptible than others."

I admit this plant to the present list with doubt. But attention should be widely drawn to such a well-known tree, in order that we may ascertain what are the real facts of the danger of handling it.

Amaryllidaceæ.

DAFFODIL POISONING.

In the *Gardeners' Chronicle* of 11th March, 1905, p. 158, there is a note on daffodil poisoning, as follows:—

Mr. J. Lowe wrote, stating that the gatherers of daffodils often suffered from sore hands, and requesting some information as to a remedy. Mr. J. Walker wrote, stating that usually only those who had chapped hands, or who failed to wash their hands after picking the flowers, suffered from the trouble. The committee were of opinion that the crystals of calcium oxalate (raphides), which are frequently in abundance in this and similar plants, were the cause of the trouble; and it was suggested that the workers should thoroughly grease their hands with tallow before picking the flowers, or should wear gloves.

**Nouv. Rem.*, 1903, 65. Quoted in *Pharmaceutical Journal*, 21st March, 1903, p. 422.

This report called for a reply in the issue of the journal of the 18th idem, from which the following extracts are taken:—

Though I have been closely associated with the early forcing of daffodils for nearly twenty years, handling as many as 300,000 in this way in a season, and am also familiar with the produce of many acres from the open ground at a later date, necessitating considerable assistance, I have only known of two instances where any irritation has been caused.

It appears that the irritation affects the flower-gatherers rather than those who bunch the flowers, the hands of the former coming into direct contact with the exuding juices of the plant. In the first instance the irritation and inflammation were so severe that I was compelled to take the man from the work. He was the only one affected out of a dozen or more. I am not of the same opinion as Mr. J. Walker, that chapped hands or dirty hands have much to do with the matter, but rather that some persons naturally are more susceptible to these attacks. Of course, if a cut or scar exists on the hands, and the juices come into contact with it, there is every reason for the attack. In the instance referred to there were no such scars existing, and the bare arms—for my men usually gather with the sleeves uprolled—were as badly affected as any part of the hand. I have never tried the effect of putting grease on the hands, and, from the way much gathering polishes the finger-tips and hands, should doubt its efficacy. If gloves are at all practicable, the finger-tips should be removed. By reason of the quickly polishing and drying effect the gathering of daffodil flowers has upon my own fingers and hands generally, I frequently hold them in the water-tank, and give them a good rubbing together through the water.

It is also interesting to note that while I was probably one of the earliest and worst sufferers in England from the irritation caused by *Primula obconica*, I have never experienced any discomfort from the daffodils. Equally interesting is the fact that the person who, years ago, suffered much from the daffodils could handle the *Primula* with impunity. It is the same to-day, and the worker who suffers from the daffodil irritation is not in the least affected by the *Primula*. Hence I regard the susceptible nature of the skin to be a more or less predisposing cause when cuts or scars are absent.

A correspondent of the *Gardeners' Chronicle*, 11th March, 1905, p. 156, stated that in taking down two large plants of the American Aloe (*Agave americana*) which had just flowered on St. Michael's Mount, Cornwall, the sap getting on the skin caused intense irritation. The editor attributed the irritation to raphides (minute crystals) as in the case of bulbs. I should be glad if readers would say whether they have a similar experience in dealing with so common a plant.

A letter, entitled "Bulb Sorters' Finger Nails" will be found in the English journal "The Garden," of 2nd September, 1905, p. 139, in which the statements are made, in referring to the above, that there is no cure for bulb sorters' disease except leaving the bulbs alone. Gardening gloves are no use, as they do not prevent some dust getting under the nails.

"The Garden," of 3rd February, 1906, p. 67, has the note:—

We force large quantities of daffodils for cut flowers. The men working in this crop very frequently get their hands poisoned by the juice which flows from the base of the flower-stalk when broken or cut. To aid us in arriving at a suitable remedy for this, we should like to know what poison it is which is present in the plants. Being ourselves quite ignorant on the point, we inquired of one of our largest daffodil growers, who told us:—"It is an old complaint, as I have observed it all the time I have grown daffodils. Nearly all the men and women suffer more or less with bad hands at bunching-time. It is caused, I think, by their having chapped hands, on which the juice of the daffodil acts as an irritant. But if there is no broken skin, and the hands are well washed after bunching the flowers, there is little, if any,

poisoning." Having obtained so much information, we at once examined the matter for ourselves, and we find that the "poisoning" is purely mechanical. It is caused by small crystals of lime, technically called *raphides*, which exist in great numbers in the sap or juice of the daffodil. It is only necessary, therefore, to keep these crystals out of the skin—to prevent them from entering, either through cuts or the cracks caused by chapping, or under the finger-nails.

Liliaceæ.

Hyacinthus orientalis, L., and varieties (the common Hyacinth of gardens).—"Forms of eczema" were said to have been produced in persons handling and cleaning these bulbs. Although the fact was familiar to gardeners, the cause did not appear to have been clearly traced. Experiments and observations at the Jodrell Laboratory, at Kew, had shown that both dry and moist scales were capable of producing considerable irritation in certain cases when applied directly to the skin. There was little doubt that the raphides were the prime agents. These needle-shaped crystals (composed of oxalate of lime) varied from $\frac{1}{100}$ th to $\frac{1}{200}$ th of an inch in length, and were arranged in close bundles, easily dispersed by rubbing the dry scales. In the growing plants they were doubtless protective, as snails, for instance, avoided hyacinth bulbs, but attacked others growing close by. Roman hyacinths (var. *albulus*) were understood to cause greater irritation than other varieties.

"Dr. D. H. Scott described some experiments which he had tried, tending to confirm the conclusion that the irritation of the skin produced by contact with the bulb scales of hyacinths is due immediately to puncture by the numerous raphides."

Aroideæ.

Richardia æthiopica, Spreng. ("Lily of the Nile" of gardeners, the common "Arum Lily" of Australian gardens).—Mr. J. Y. Johnson,† of Funchal, Maderia, shows that this plant is, like *Hyacinthus*, responsible for a form of eczema.

The laundresses of Funchal had tried to utilise the starch obtainable from the corms, but complained of the irritation in the hands produced by it, which, on examination, was found to result from the presence of numerous needle-shaped raphides.

In the discussion which followed the reading of a paper on this subject before the Therapeutic Society of London, Dr. Crichton said that green elder leaves were very powerful irritants, and in one case in which he had ordered an application of elder-flower ointment, the druggist, having no flowers of the elder at the time, used the green leaves instead, but this produced very violent irritation. The common buttercup is also very irritating if applied to the skin.

*Dr. Morris, C.M.G., in *Proc. Linn. Soc.*, 5th November, 1896.

† *Proc. Linn. Soc.*, 21st January, 1897.

APPENDIX I.

Irritant Woods.

In connection with our article on "Plants and Skin Irritants," printed on p. 110, the following contribution on "irritant" wood, which we extract from the *Journal of the Royal Society of Arts*, is interesting:—

In the course of the past year inquiry was made by the Factory and Workshop Department into the effect of irritant woods, and the extent to which they are used in this country. For example, in the case of satin-wood, there was inquiry into (1) the extent and class of work in which it was used; (2) the evidence there is as to its irritant action on the skin; (3) the precautions taken in its use. Much confusion was found as to the kind of wood referred to as satin-wood, the two covering East and West Indian satin-wood and satin walnut. The first two are practically confined to high-class furniture and furniture-making, and to decoration of cabins and overmantel work in ships. Occasionally thermometer stands, backs of toilet brushes, and similar articles are made of it. In those trades it is used as an inlay or veneer, involving little exposure to irritant dust. East Indian satin-wood possesses much more irritant properties than the West Indian variety. Satin walnut appears to be no more harmful than deal. The East Indian wood is only used in two shipyards. It causes an eruption on the skin of the worker exposed to the dust or shavings produced during manufacture; but some persons are much more susceptible to its effect than others. One man stated to the inspector that if he only placed a shaving of the wood on the back of the hand, it caused a sore on the skin at that point. The injurious effects, however, appear to be only temporary. Exhaust ventilation is in use for carrying off dust, &c., from the machines in most of the works, including one of the shipyards in which the East Indian wood is used. Reference to occasional contact action on the skin is made as to teak by Mr. Inspector Wright (North London), who refers to reports of "swollen arms and eyes," by Mr. Shannin (Liverpool) and by Mr. Grant (Preston), as to teak and olive-wood. The inspector in Sheffield states that "in the manufacture of knife scales and tool handles the following woods are considered to be irritant:—Some of the ebonies, magneta rose-woods, West Indian box-wood, cocos-wood, and partridge-wood. Irritation of the eyes and nose is caused also by woods of the mahogany type. East Indian wood had to be discarded in the shuttle trade owing to its irritating action on the eyes." Mr. Lewis (Manchester) states that salica-wood, from Cuba, was stated to give off "a fluffy dust under the machines and hand planes, the effect of which upon the workers is to cause a running of the eyes and nose, and a general feeling of cold in the head. The symptoms pass off in an hour or so after discontinuance of work." Eczematous eruptions are said to be produced by the so-called Borneo rose-wood—a wood used owing to its brilliant colour and exquisite grain in fret-saw work; but the Director of the Imperial Institute, Sir Wyndham Dunstan, who has interested himself in this wood, has failed to discover injurious properties in it.—*Gardeners' Chronicle*, 29th August, 1908, p. 167.)

APPENDIX II.

Poisonous Plants of Indiana.

A series of experiments have been made with the reputed poisonous plants of this State, which tend to show that the irritation of the skin caused by many of them is due to two causes, viz., the presence of some specific irritant, and in other cases, as in *Arctium* and *Xanthium*, to mechanical causes. A number of species were experimented on, twenty-two persons submitting themselves to trial. The plants found to act in a greater or less degree as irritants to the skin are mentioned in the order of their virulence, viz., *Rhus vernix*, Linn.; *Rhus radicans*, *Euphorbia corollata*, *Cypripedium hirsutum*, *Anthemis cotula*, *Leptilon canadense*, *Clematis virginiana*, and *Bidens frondosa*; but all except the first three or four may be handled with safety by

ordinary persons who have not a specially sensitive skin. The author considers the *Primula obconica* to cause irritation only as a traumatic effect. [This is certainly not the case in Great Britain.—Ed. P.J.] The following plants, which have been described as causing irritation of the skin, were not found to show unpleasant results, viz.:—*Alisma plantago*, *Arisæma triphyllum*, *Arum dracontium*, *Symplocarpus fœtidus*, *Phytolacca decandra*, *Actæa rubra*, *Anemone quinquefolia*, *Sanguinaria canadensis*, *Drosera rotundifolia*, *Euphorbia maculata*, *E. humistrata*, *E. nutans*, *E. commutata*, *Lobelia inflata*, and *Solidago odora*. The expressed juice of *Polygonum hydropiper* and *P. punctatum* caused irritation when applied to the mucous membrane, but not to the skin; and the powder of dried *Phytolacca decandra* and of *Podophyllum peltatum* caused persistent irritation to mucous membranes.—STANLEY COOPER (*Proc. Indiana Acad. Sci.*, 1906, 51-63, quoted in the *Pharm. Journ.*, London, 24th February, 1906.)

DISEASE AMONGST TURKEY POULTS.

ON the 1st November, when on a visit to the Wagga Experiment Farm, Mr. A. L. Wyndham, the Poultry Expert there, drew my attention to a disease amongst fifty turkey poults, which was new to him, and also to myself.

The symptoms were an unthrifty condition in the affected birds, which were walking on their heels, the toes inclining upwards and not touching the ground at all.

The following treatment was decided upon:—A handful of powdered wood charcoal and 2 drams of powdered sulphate of iron was added twice daily to a ration consisting of 1 quart each of bran and pollard, mixed with separated milk. Crushed green bone was also prescribed, as well as lime in the drinking water.

On my next visit to the farm on the 15th November, I found forty-eight of the diseased poults cured, and the remaining two in better health. I was informed that the poults showed improvement shortly after treatment was commenced, and that it was steadily maintained; a result I consider due to the care and attention shown in carrying out the treatment.

I was told by Mr. Wyndham that he hears this disease exists in other parts of New South Wales, and also in Victoria. As I have come to no definite decision as to the cause of the disease, which will be a matter for future attention and investigation, we will be glad to hear from any readers of the *Agricultural Gazette* who have had experience of similar affection in turkeys, and can give us any information in connection therewith.

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