

Pollen - an interesting raw material

Each flower has its pollen, characteristic for that particular plant. The size, weight, shape, number of hila (germinal openings), ridges and hollows on the sheath makes it possible to differ pollen from different plants. Sometimes researchers refer to pollen as the plants' fingerprints. Within palynology (knowledge of pollen) (his character has created the modern pollen analysis, where Swedish researchers such as Lennart von Porat and Gunnar Erdtman are great names.

Palynologists can sift off the pollen grains from a sample of soil by treating the soil with strong acids, at which everything is dissolved except the pollen. the sheath of pollen grains is almost indestructible. Then the pollen grains are examined, and the identity of the plant in question can be established. In soil from an archaeological find it is thus possible to get a picture of the nature at that very time when the find was buried in the soil. If one knows what the vegetation was like in the past one can date the find rather exactly.

A pollen grain is very small. Of the ordinary pollens used in the production of Cernitin™ extracts, there is room for 100 in a row on one millimeter. There are, however, much smaller pollen: those from "Forget-me-not" are so small that there is room for 300 in a row on one millimeter.

The palynologists have in detail described pollen grains from a large number of plants, and this makes it possible for Cernelle to assort the pollen grains and then control the conformity to type. The conformity is received by treating the raw material in certain apparatus. Tests

performed at the Palynological Laboratory in Stockholm have shown that the conformity of the Cernelle pollen raw material is so high, that the contents of foreign pollen grains in true-to-type material never exceed 1 %. As a rule one can find a total conformity. If foreign particles are present they only amount to some promille consisting of a few foreign pollen grains and perhaps also some grains of dust.

This conformity is necessary, as pollen is the raw material for a pharmaceutical product. Cernitin™ which must be controlled as to its effect and also possible side-effects. Bearing in mind the well-known fact that pollen as raw material contains substances that can give rise to side-effects of different kinds, such as allergies, one must test the pollen as raw material and compare their side-effects with those of the Cernitin™ extracted from pollen, in order to be sure that the Cernitin™ extracted from the pollen in question is harmless and can be used regularly and for a very long time without risk. This is very important and the absolutely first step to be taken in the production of products for human use.

In this connection we would like to point out the danger of using pollen raw material for human consumption. Pollen raw material has to be refined before use exactly as the sugar beet is refined to sugar. (The sugar-beet. however. is probably much more harmless to eat than pollen.)

The reason for mentioning these facts is that material containing pollen has of old been collected by apiarists to be given to weak bee colonies in the spring and thereby saving them from destruction. Such bee-feed has often been

sold among beekeepers at a fixed market price, after having been collected as follows:

A grating is placed on the beehive entrance; when the bees pass it the collected lumps of pollen and plant fibers are scraped off and fall down in a box covered with a net so that the bees cannot take it back. When the box is filled, the apiarist empties it. The bee-collected pollen lumps contain rather a high percentage of moist and make an excellent foundation for the growing of all kinds of bacteria and fungi, promoted by the warm summer air. Different insects search the pollen traps to lay their eggs there. The apiarists themselves grade the quality of their product by the content of worms. I.e. the amount of larvae found per 100g lump of the material, which evidently is not suitable for consumption by human beings. In spite of this fact unscrupulous businessmen buy this raw material, press it to tablets and sell this bee-feed for human consumption, of course with a very good profit.

The health authorities should demand control and analysis of such material and block the marketing thereof definitely.

Cernitin™ - a microbiological digest

By extraction from the pollen raw material by a special method a certain substance, Cernitin™ is won. Hereby only type-pure pollen is used, taken from selected plants, chosen after animal experiments and other tests of suitability. Before the extraction it is stabilized and purified through a special treatment.

The extraction of the pollen grains presents certain problems. Each grain is a biological unit with a complete set of different substances necessary for the creation of new life. These substances are well protected by the sheath, which is very resistant and can stay unchanged for thousands of years even if the grain has fallen unprotected on the ground. However, the sheath is provided with hila (germinal openings), covered by a membrane, which can be dissolved.

The special extraction method used by Cernelle can shortly be described as follows. After having removed the membrane with a solvent the contents of the grains are flushed out through the hila. The solvent is then removed. This operation is made so carefully that the extract is

never heated to more than 40°C, the extract is called Cernitin™. The Cernitin™ is then microbiologically digested in a process during which certain microbes ferment the extract under control. Through this treatment such substances that are toxic or harmful, e.g. allergens and other high-molecular substances, are broken down. Therefore, as a rule, Cernitin™ products can be used also by people otherwise allergic or hypersensitive to pollen.

This breaking down can easily be controlled with a gel precipitation test according to Ouchterlony, in which the Cernitin™ extract is controlled against blood from rabbits treated with the pollen in question. During the fermentation high-molecular substances, that are difficult to absorb and often irritating, are reduced to low-molecular substances: e.g. protein is reduced to peptides and amino acids. These low-molecular substances are harmless and can quickly be absorbed into the blood so that the body can benefit by them immediately. This is the reason for the quick effect of the Cernitin™ preparations and also an explanation of the fact that to attain a good effect relatively small quantities are needed.

Almost nothing gets lost: all of the Cernitin™ is active, therein different from usual foodstuff or synthetic substances of a more complicated composition. In those cases the body can sometimes have difficulties in utilizing substances as e. g. calcium and vitamin preparations, even if large quantities are supplied.

Some of the conditions determinative for the body's ability to utilize different substances are known. Thus, already more than 100 years ago, Justus von Liebig could phrase his classic "Minimum Law" in which he pronounced that sometimes a substance fed in too small quantities can be determining for how all the nourishment intake is absorbed. Thus it is possible to increase the body's ability to utilize supplied nourishment by providing the body with sufficient nutrient substances of different kinds. This can, however, many times be difficult, as we are creatures of habit and prefer to eat what we like, even if we thereby perhaps miss some substances that our body would really need.

By a daily supply of Cernitin™ extract the body will be guaranteed all the substances necessary for life and can fully utilize vitamins and other

important substances present in the daily food. In this way Cernitin™ normalizes the functions of the body and increases health and resistance against diseases.

Control of Cernelle products

The pollen raw material is collected by Cernelle itself, in a way guaranteeing type-pure pollen of low moisture. The pollen is stored in constant temperature and under controlled air humidity conditions.

The control starts immediately after the collection. The conformity to type of the raw material is established, and for security samples are also sent for control to the Palynological Laboratory in Stockholm.

The raw material is extracted under constant control, and the following fermentation of the extract controlled by gel precipitation test as well as spectrophotometric and chromatographic analyses. The extracted Cernitin™ is split into fractions with different qualities e.g. "Cernitin™ T60™ sicc." "Cernitin™ GBX™₁".

At the Cernelle control laboratory the Cernitin™ fractions are distinguished from each other by special analysis methods, which are also performed on the finished extracts. All finished products are also controlled. Samples are taken daily from each batch of preparations and the contents of active substances established. The Cernitin™ extracts also undergo toxicity control.

At last, also dissolving capacity of the tablet preparations and their resistibility against different air humidity and temperature during storage are controlled. Tablets with Cernitin™ extracts shall, as a rule, keep their active properties unchanged during almost unlimited storage time when kept in a dry and cool place. Tablets with vitamins added have a storage time of only ca. 2 year, as the activity of the vitamins will be reduced when stored for a longer period.

All constituents contained in the Cernelle preparations are also controlled at the arrival to correspond to the regulations of the pharmacopoeia.

