

Introduction of the study "Cannabis as a medicine"

This monograph is a collection of lectures and discussions from one meeting of the scientific conference of universities in Olomouc on 10 December 1954. An entire section of it was devoted to the fully medicinal, especially antibiotic effect of cannabis.

This effect was discovered, properly rediscovered, during a systematic examination of plants for antibiotics, which I initiated a few years ago (see my article in *Lék. listy* 5. 717 (1950), when the assistants of the Hygienic Institute of the PU Zdr. Krejčí and V. Burian, in cooperation with the well-known Olomouc botanist Otruba, examined over 2,000 plants for antibiotics. Attention has been paid in more detail to essential oils, garlic, hops, whose antibiotic substances were, however, already quite well known, then hemp, where this was not known today. Hemp has aroused our special interest both because of the intensity of its effect, the stability of antibiotics, which at the same time have a strong analgesic effect, and because it is possible to obtain these substances from industrial waste, while in the case of hops these are the same substances that the brewing industry needs.

When I searched in old herbaria and folk and savage medicines, I found that these excellent properties of cannabis had been used here long ago.

It is an instructive example of how a highly effective medicinal plant, well known in antiquity and the Middle Ages, used even at the end of the nineteenth century, was forgotten and abandoned - quite unjustly - by today's official medicine.

Cannabis has been known in Europe for a total of almost 3,000 years, first among the Scythians, knowledge probably came from Central and East Asia. In Europe, it was originally a medicinal plant, then a fibre and oil plant, the seed was a food that was still quite valued in the Middle Ages. The fibre, food, oil properties and influence on soil improvement and the properties of harmful insects and phytopathogenic moulds that drive away, we omit here, as well as the hashish effect, which has been known in Europe only since the Egyptian campaign of Napoleon, but in the Orient for a very long time. Our cannabis does not have an intoxicating effect, or only to a minimal extent. This depends on the warm climate, *Cannabis indica* and *Cannabis sativa* are probably just varieties and even the first ones do not produce hashish in our country, at least not to a noticeable extent.

In the Middle Ages and in the folk medicine of many countries, the antibiotic and analgesic properties of cannabis were known. As an antibacterial agent, for example, it is mainly used by South African blacks. The high antibiotic effect has been rediscovered and confirmed in our institute, and the main part of this monograph will be devoted to this healing effect. Hemp extract often works where all previous antibiotics have failed, including terramycin and tyrothricin. In addition, its good analgesic effect is advantageously applied here. It sometimes works even where the effect does not appear to be effective *in vitro*. There is still much that is unclear, e.g., the weak but long-term analgesic effect demonstrable in animals, and the strong irritation in the case of *i.m.* injection, and conversely in the case of the dental pulp - so sensitive - and elsewhere, e.g., in otitis and wounds, rapid pain relief. There are, of course, cases of failure, and these are the subjects of further research. Partly it is perhaps due to an unsuitable vehicle that does not release the antibiotic to a sufficient extent, partly to a special microbial flora. It will be necessary to study more closely the emergence of resistance, as well as anaerobic, fungal, yeast, rickettsia and virus floras, which we have not yet been able to pay sufficient attention to. Unfortunately, there have been only two workers for this theoretical-laboratory microbiological study, one for chemical and two for pharmacological properties, while elsewhere for antibiotics there are whole staffs of researchers available.

So far, the most advanced clinically has been the testing of an antibiotic agent made from cannabis in dentistry, where it has significantly expanded the treatment options for incipient pulpitis in one session. It will be necessary to compare the results with other similar antibiotic means, especially penicillin-streptomycin pastes, Soviet sativin and older pastes with penetrin (both antibiotics from garlic), the long-used eugenol, or perhaps even with the acidophile bacillus culture, which is now quite abandoned, but once recommended by Entin in Leningrad, and other sometimes used antiseptic substances. At the same time, the analgesic effect of cannabis is particularly beneficial here. So far, we have placed the main emphasis not on pure crystalline substances, but on amorphous resin mixtures, partly due to the lack of material, which was supplied almost exclusively from the Losiny Institute and partly from Jince. Firstly, because these extracts prove to be much more active than the individual pure substances isolated so far. By the way, we intend to

study extracts not depleted of chlorophyll and combinations with extracts of other plants and grains in the future, which, according to today's experience, also promises success.

In the next part, Dr. Šírek, the head physician presents his experience with other substances from cannabis than soft resins from its shoots - namely with substances from hemp seed - seeds. For the time being, these are substances extracted by water, or saline solutions and hot milk, i.e. mainly edestin, perhaps choline and trigoneline, and a little bit of lipids. The first is a perfect protein, exceptional in the plant kingdom, as it supplies all the important amino acids, especially tryptophan, provitamin to niacinamide, then lysine, arginine and methionine, important for the treatment of TB and growth, and the last one especially important for the liver, such as the above-mentioned choline (vitamin J) and finally perhaps trigoneline, belonging to the group of vitamin PP and structurally somewhat related to INH. In dietology, it seems that these substances will be very important, especially in tuberculosis, especially in children's.

The third and last group of substances, lipids, has not yet been tested, although according to old indications and folk use, medicinal ingredients can be expected here as well. Perhaps already among neutral fats, where, judging by the characteristics of hemp oil, there are many important double bonds, and therefore also vitagen F, or other fatty acids, perhaps with a specific effect. Let's remember the chalmogras in leprosy. Lecithins and phytosterols in particular, or the unsaponifiable fraction of lipids, may also be of importance, from which hormonal effects with an effect on the mammary glands and adrenal glands can be expected, based on old experience.

We hope that with this publication we will succeed in gaining collaborators in further laboratory and clinical research of a very promising old-new herbal medicine and to include it in our therapeutical arsenal again as a powerful weapon against diseases, especially infectious diseases, and against pain.

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