



Eva Crane Trust

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# XXII INTERNATIONAL APICULTURAL CONGRESS

**Munich, 1st to 7th August 1969**

by EVA CRANE

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## Introduction

Although seventeen of the previous International Beekeeping Congresses had been held in Western Europe, this was the first to take place in Germany. It attracted beekeepers and bee scientists from 41 countries, distributed as shown below, according to the official list of participants.

### *Attendance at the last two Congresses*

	Germany 1969	U.S.A. 1967
No. countries represented	41	43
Total no. members in official list	1230	995
Percentage from western Europe	82%	39%
Percentage from eastern Europe	9%	3%
Percentage from North America	6%	52%
Percentage from other continents	3%	6%

Less than 10% thus came from outside Europe to the Congress, but the 111 people who made the long journeys in order to do so represented 17 countries, and their presence was rewarding in many ways. Of countries near at hand, Britain, France and West Germany between them made up half the attendance.

The Congress handbook is worth special mention. In addition to the usual programme and summaries of papers, the handbook includes details of the German Beekeepers' Association and of German bee journals (pages 33-36)\*, German bee research institutes (17-21), a history of the International Apicultural Congresses (63-69), and the following articles:

- O. WAHL (71-76) Contributions of German-speaking scientists to the development of apiculture
- F. RUTTNER (77-79) Improvement of bees through breeding
- G. VORWOHL (80) Supervision of honey in the "standard jar" of the German Beekeepers' Association
- W. KAESER (81) Overseeing and prevention of bee diseases in the Federal Republic of Germany
- W. STECHE (82-84) From the history and practice of apiculture in German-speaking areas
- F. K. BÖTTCHER (85-87) Forest apiculture of the Middle Ages
- K.-A. EICKMEYER (87-92) Lüneburger skep beekeeping
- A. SCHÜSSLER (92-102) Historical development of the organization of the German Beekeepers' Association.

\* Page numbers quoted are in the English edition; they are not identical in French and German editions.

## Formal opening and other Sessions

### Opening ceremonies

These took place on Sunday, 3rd August in the Bavarian Hall, part of the complex of buildings in the Exhibition Park at Theresienhöhe on the outskirts of Munich. After addresses by the Congress President Dr. F. Gnädinger, and the President of Apimondia Prof. V. Harnaj, the Congress was formally opened by the German Minister of Food, Agriculture and Forestry, Mr. H. Höcherl. The Mayor of Munich Dr. H. J. Vogel followed and, as has become the custom, the opening ceremonies were concluded with a speech by L. R. J. ridder van Rappard.

At the last Congress the President's "chain of office" was worn by the late Mr. J. I. Hambleton. The assembly paid a special tribute to his memory as Professor G. F. Townsend placed the "chain" on Dr. Gnädinger, the succeeding President. Another loss remembered at the same time was that of Maria Estremera de Cabezas, President of the XVIII Congress in Madrid in 1961.

The Congress having been officially opened, the audience had the great pleasure and privilege of listening to a lecture by Professor K. von Frisch: "The foraging bee". With the kind permission of Professor K. von Frisch this lecture is printed in full on pages 141-152.

### Other Sessions

The official opening had been preceded by two days of scientific meetings, concerned with honeydew and other subjects on 1st August, and on honeybee language and orientation, and on septicaemia, nosema and poisoning of bees on 2nd August. Papers read at these sessions are designated on pages 131-138. On some past occasions, the separate scientific sessions have had great merit, enabling research workers to discuss their current problems usefully, as in the informal meetings of the early 1950s, and in Czechoslovakia and the U.S.A. in the 1960s. But with no consistent difference in content or procedure between these meetings and those held later, it would seem in many ways better not to split the Congress up in this way.

The General Congress Sessions were:

- 3rd August: Development of regional apiculture in connection with world honey trade  
Products of the bee colony and human health
- 4th August: Bee technology and apiary equipment  
Nectar flora and pollination
- 6th August: Bee biology: (a) Physiology of reproduction  
(b) Bee nutrition
- 7th August: Bee pathology: (a) Biological measures as disease prophylaxis  
(b) Medicaments in prophylaxis of bee diseases

The Scientific Sessions were summarized at the appropriate General Sessions, which were opened by Dr. Eva Crane speaking on "Bee research: retrospect and prospect" (*Bee World*, pages 100-103, 110) and Professor F. Ruttner speaking on the new journal *Apidologie*.

Various other organizations tried to arrange meetings of their own members who came from different parts of the world to attend the Congress. There is much to be said for supporting *one* International Beekeeping Congress, and for holding as many international "working" meetings as possible there, rather

than starting splinter-group meetings. It is therefore important that facilities should be made available for specialist groups to meet together, and that such meetings should be regarded as an asset—rather than as some form of competition—to the Congress itself. Advance co-operation is necessary, so that those concerned know in good time what travelling arrangements to make; it may be that a day should be set aside just before the Congress—the Congress Committee is the only body which can make the outline plans, but these must be announced early enough. It must be made possible for all concerned to get information about time and place of such meetings, and the place announced must be accessible at the time proposed.

### Papers read

The 180 papers listed in the programme are set out below. As in earlier Congresses reported in *Bee World*, the papers are grouped under broad subjects with U.D.C. numbers appended. Any papers which give new information not available elsewhere will be dealt with individually in *Apicultural Abstracts*. Authors' names not in the Latin alphabet are given in the standard transliteration used by the B.R.A. where possible; known errors in spelling have been corrected. The author's name is followed by the page number of the summary in the English Congress handbook; handbooks were also published in French and German, and an abbreviated version in Russian. As usual, the full Russian texts of papers from the U.S.S.R. (with summaries in English) were printed in full in a separate book published in Moscow. Papers read at the Scientific Sessions (see page 130) are designated by "s" after the page number in the handbook summary; pages in the Russian book follow next.

Simultaneous translation was provided, but some people were unable to hear many of the papers because of poor reception from the audio units, and audiences were in consequence often rather small.

### Beekeeping Organizations 638.1

- BroYE, R. DE (114-115) Organization of apicultural-hygiene in France
- ALBER, M. A. (103) Sicilian forerunners of modern apiarists
- BILASH, G. D. & KOSIN, R. B. (109s, 11-16) Outlook for development of Soviet apiculture and objects of beekeeping science
- NUZHDI, A. S. (—, 22-30) Specialization and concentration of apiculture in the RSFSR
- KOCIS, A. (136-137) Development of apiculture in Hungary
- SELLIANAKIS, G. (173) Beekeeping as an enterprise. Modern organizing directions
- KASSARIAN, S. (134-135) Apiary problems in Persia and suggestions for improvement
- HICHERI, K., BOULERBALA, M. & POPA, A. (131) Tunisian apiculture
- LINDER, J. (147) Attempts at modernizing apiculture in the region of *Apis mellifera adansonii*
- MICHAEL, A. S. (153) United States bee laws and regulations

### Honeybees 638.121

- DIETZ, A. & LAMBREMONT, E. N. (116s) Caste determination in honey bees. II. Food consumption of individual honey bee larvae determined with <sup>32</sup>P labelled royal jelly
- REMBOLD, H. (166) Biochemistry of the caste formation of the honey bee
- GARY, N. E. (123) Mating behavior of the honey bee—recent advances
- BÖTTCHER, F. K. (111) On the problem of the mating flight

- LAIDLAW, H. H. (114s) Honey bee mutations  
 DUSTMANN, J. H. (117-118s) Chemical analysis of eye-color mutations of *Apis mellifera*  
 SCHNETTER, B. (172s) Visual form discrimination of the honey bee  
 PEHANI, H., RAKOVEC, V. & PIPAN, N. (158s) Fine structure of the intestinal epithelial cells of normal and starving bees  
 NIKIFOROV, A. V., URSU, N. A. & SHOIMU, K. YU. (156, 112-121) On the question of caryotype of honeybees

### Queens 638.121.1

- KOENIGER, N. (138) Experiments concerning the ability of the queen (*Apis mellifica* L.) to distinguish between drone and worker cells  
 VESELY, V. (182s) Concerning retention of sperm in the oviducts of artificially inseminated bee queens  
 TRYASKO, V. V. (180s, 147-154) The study of spontaneous female parthenogenesis in honeybees  
 KOENIGER, G. (137s) Experiments concerning the physiology of the spermatheca of the queen bee (*Apis mellifica* L.)  
 AVETISYAN, G. A. & UL'YANOVA, A. S. (108-109, 41-51) Effect of different doses of gamma-irradiation on survival and variability of honeybees  
 KHIDESHILI, A. L. & MCHEDLISHVILI, N. N. (131-132, 155-158) Qualitative characteristics of grey mountain Caucasian queens

### Workers 638.121.2

- ZHEREBKIN, M. V. & SHAGUN, YA. L. (188, 65-70) Specific features of physiological preparation of bees for hibernation  
 ZHEREBKIN, M. V. & CHAPL'GIN, V. P. (188s, 58-64) Age and seasonal variability in activity of some digestive enzymes in bees of different races  
 FOTI, N., CRISAN, J. & POPA, L. (121s) Difference in protein structure in the hemolymph of bees in relation to age, season and function of the bee  
 GIEBEL, W. (123) The endopeptidase-spectrum of the honeybee: comparative examinations of larvae and adult workers and drones and of the adult queen  
 HALBERSTADT, K. (128s) Enzymological data concerning the carbohydrases of the hypopharyngeal glands of worker bees  
 DEREVICI, A. & DORIN, E. (115-116s) Analyses of the mineral components of dehydrated bees  
 BITTEL, H. (109s) Molecular structure and scent distinction of the honeybee

### Field Bees 638.121.24

- FRISCH, K. VON (122) The bee on collecting flight  
 HOHMANN, H. (132) Concerning the effect of scent substances and pollen extracts on the collecting and courting behaviour of pollinating bees (*Apis mellifica* L.)  
 KRISTON, I. (140s) *Apis mellifica*'s learning of unbiological scents  
 EDRICH, W. (118) Azimuthal calculations of the equatorial sun's course during the night by the *Apis mellifica adansonii*  
 PONOMAREVA, E. G. & SERGEEVA, R. V. (162-163s, 117-122) On bees' transition from one source of flow to another  
 RAGIM-ZADE, M. S. (165-166s, 129-134) Photoperiodism of honeybees' food supply  
 NAZAROV, S. S. (156s, 261-264) On the possibility of foraging bees transferring high concentrations of organic insecticides into the brood nest

### Drones 638.121.3

- WOYKE, J. (187s) The role of sex alleles in the development of reproductive organs of diploid drones

### Honeybee Races 638.123

- VLATKOVIĆ, B. (183s) Concerning morphological examination of the African bee (*Apis mellifera adansonii*)

### The Colony, including Social Behaviour 638.124

- DREHER, K. (117) Inheritance of performance in the honey bee  
 CERIMAGIC, H. (112) Activity of the bee colony and relation thereof to intensity of wax production of the honeybee (*Apis mellifera* L.)  
 HERBERT, E. W., JR. (131s) The brood rearing capability of caged honey bees fed dandelion (*Taraxacum officinale*) and mixed pollen diets  
 VELITSHKOV, V. (181) Honey consumption and winter dwindling of bees in Bulgaria  
 VILLUMSTAD, E. (182-183) Overwintering and spring development of bee colonies on combs which were renewed during autumn feeding  
 MIKHAILOV, K. I. (153-154, 103-111) Indices of bees' hibernation as a breeding sign  
 ES'KOV, E. K. (120s, 52-57) Spectrum of sound background of a bee hive as an index of biological state of bees

### Communication in Honeybees 638.124.38

- LOPATINA, N. G. & CHESNOKOVA, E. G. (147s, 78-83) The role of training in receiving information on space location of a food source by honeybees  
 LEVCHENKO, I. A., SHALIMOV, I. I., BAGRII, I. G., OLIFIR, V. N. & GUBIN, V. A. (146s, 71-77) Comparative study of signalling in some races of honeybees  
 MAUTZ, D. (152s) Quantitative inquiry about the communication-effect of bee dances  
 EDRICH, W. (119s) The effect of light and gravity on the direction details in bee dances  
 SCHRICKER, B. (172s) The effect of sublethal doses of parathion on the indication of distance by the honey bee

### Bee Plants : General 638.13

- SIMIDCIEV, T. (174) Investigations of the value of sunflower (*Helianthus annuus* L.) as a forage source for honeybees (*Apis mellifera* L.) in Bulgaria  
 HACCOUR, P. (127) Hubam-stone clover (*Melilotus hubam*). An unusual and little-known plant  
 KROPÁČOVÁ, S. (141) The relationship of the honey bee to sainfoin (*Onobrychis sativa*)

### Bee Plants : Nectar Secretion 638.132.1

- PEL'MENEV, V. K. (158, 196-202) Honey productivity of forests in the Soviet Far East  
 GIRNIK, D. V. (124, 173-175) Comprehensive utilization of sweet clover  
 ANTSEFEROVA, T. A. (105, 167-172) Utilization of nectar carriers to improve bee-pasture in beekeeping and biological means of pest control for farm crops  
 PETKOV, V. (159) Study on the forage and honey-bearing qualities of some annual legume-forage and honey crop mixtures  
 PETKOV, V. (159-160) Study of the honey-bearing qualities of some plants  
 DIETZ, F. (116) Dependence of nectar secretion of apple blossoms on environmental factors  
 ZAURALOV, O. A. (171, 181-186) Physiological differences of nectaries having different anatomical structures  
 KROPÁČOVÁ, S. (140-141) Study of the influence of K-fertilizers and sprays with ATP (adenosintriphosphate) on nectar and opening-sensitivity of alfalfa blossoms

## Bee Plants : Sources of Honeydew 638.139.2

- SAFER, V. & CIRNU, I. (171s) Reports and perspectives concerning honeydew reserves in Rumania
- RUPPERTSHOFEN, H. (169-170s) Organization and assurance of a constant basic forage from the forest
- DEMIANOWICZ, Z. (115s) The silver fir honeydew-honeys from the Swietokrzyskie mountains
- RIHAR, J. (168s) Concerning periodical appearance of honeydew of *Buchneria pectinatae* on the firs in Slovenia
- FOSSEL, A. (121s) Observation and origin of spruce forage
- MUNK, R. (155s) Function of filtercell of small cicadas in producing honeydew
- PECHHACKER, H. (158s) Contribution towards study of the propagation of *Physokermes hemicyphus* (small spruce shield louse)
- HARAGSIM, O. (130s) Aphidophagous insects as factors of limiting variation in number of honeydew producers in the forest
- KUNKEL, H. (143-144s) Concerning the behaviour of aphids and related honeydew producers during the delivery of honeydew
- EHRHARDT, P. (119s) Investigation of the food requirement of the sieve-tube sucking aphid and the importance of its endosymbionts in attaining nourishment

## Beekeeping Practice 638.14

- CORNEJO, L. G., ITZKOVICH, B., BOVER, P. J. & BAROLOME, R. (113) Unification of technics by determination of apicultural and economical production costs
- ANTONESCU, C. (104) Lightening of the work of the beekeeper through use of bee-hives with small frames for successful breeding and housing of bee colonies
- TARANOV, G. F. (178, 135-142) Biological basis of means of bee maintenance in multiple brood chamber hive
- KIRN, A. (135) Concerning bees' behaviour to offer [choice] of detouring ducts [with auxiliary hives]
- SACHS, H. G. (171) Mechanical loading device to aid bee migration
- KONSTANTINOVIĆ, B. (138-139) A supplement to the investigation of normalizing bee colonies infested by laying workers
- HARAGSIM, O. (130) The communication service for honeydew forage in Czechoslovakia

## Beekeeping Equipment 638.141.3

- HACCOUR, P. (128) The Moroccan hive in relation to fighting hunger
- PATRONOCOLAOU, N. (157) The twin hive "Patro"
- BORNUS, L. (110) Results of wintering bees in the single-walled hives in climatic conditions of Poland
- GRAZE, H. (125) Synthetics in the apiary
- RUTTNER, H. (170-171) Durability of PVC foam (Styropor)
- CURYLO, J., GROMISZ, M. & BOJARCZUK, C. (113-114) The usefulness of foundations of beeswax extracted from the raw product by trichlorethylene (TChE)

## Feeding Bees 638.144

- KATZAROV, G. (135) Economical evaluation of the substitution of honey supplies with sugar supplies for bee colonies
- ROSENTHAL, C., PETRESCO, A. & CARAGIANI, S. (168s) Biochemical study of pollen and a pollen substitute
- WAHL, O. (185-186) On the question of pollen surrogate
- SPATARU, C. L. (176) Experiments concerning the biological value of proteins in bee bread, as compared with several protein substances, which are used in bee food

- MITEV, B. (154-155) Effect of some stimulants on spring development and productivity of bee colonies
- YAKOVLEV, A. S. (133, 159-166) Utilization of cobalt as a stimulant for brood rearing

## Bee Breeding 638.145.3

- GROMISZ, M. (127s) Utilization of mathematical method in evaluation of selected population of *Apis mellifica* L.
- VINOGRADOV, M. N. (187, 17-21) Krasnopolyanskii bee breeding nursery
- AVETISYAN, G. A., GUBIN, V. A. & DAVYDENKO, I. K. (—, 31-40) Selection of Carpathian bees
- RADOEV, L. (165s) Results from tests of the F<sub>2</sub> cross-breeds between the native Bulgarian and the Caucasian grey mountain bee
- MAKAROV, YU. I. & CHEREVKO, YU. A. (149, 84-93) Selection of the Far Eastern bees with estimation of queens by progeny
- TRISHINA, A. S., SHERMETYEV, A. F. & SMELEVA, N. D. (179, 143-146) On some results of reciprocal crossings of geographically remote races of honeybees
- RUTTNER, F. (170s) The cause of the hybridization barrier between *Apis mellifera* L. and *Apis cerana* Fabr. (=syn. *A. indica* Fabr.). 1. Experiments with natural and artificial insemination
- MAUL, V. (151s) The cause of the hybridization barrier between *Apis mellifera* L. and *Apis cerana* Fabr. (=syn. *A. indica* Fabr.). 2. Egg fertilization and embryonic development

## Queen Rearing and Introduction 638.145.5/6

- WEISS, K. (186) Age of breeding material in relation to queen development
- MIRZA, E., SERBANESCU, S. & DRAGAN, M. (154) Comparison of maturity of queen cells hatched in brood chambers and of those hatched in queenright nurse colonies
- FOTI, N., CRISAN, J. & POPA, A. (122) Influence of number and age of accompanying bees as well as of feeding method on the condition of the queen when retained in a cage
- RIB, R. D. (166-167, 123-128) Factors affecting receiving of queens
- SOMMEIJER, M. J. & VELTHUIS, H. H. W. (175) The acceptance of queens without mandibular glands after artificial insemination
- PAPADOPOULOU, P. (157) Introduction of foreign queens to *Apis mellifera adansonii* colonies

## Bee Diseases and Enemies : General 638.15

- SCHWANTZER, L. (172) The significance of legislative and administrative organizing measures in combating bee diseases
- OSMAN, T. B. & POPA, A. (157) Concerning bee diseases in Tunisia
- MARIN, M., POPA, A. & SERBAN, M. (149-150) Stimulative prophylaxis and therapy in apiculture
- HRISTEA, C. L. (133) Protecting and healing of bees by means of medicaments added to food
- GNÄDINGER, F. (124) Disease prophylaxis by means of biological measures
- PFEFFERLE, K. (161) Apiary practice and disease prophylaxis with special consideration of the season in the forest
- BÚZA, L. (112) Use of medicaments in prophylaxis of bee diseases in Hungary
- ATWAL, A. S. (108) Serious infestation of *Apis mellifera* L. bees by the ectoparasitic mite *Tropilaelaps clareae*

## Adult Bee Diseases 638.153

- KAMBUROV, G. & KUNKHEV, K. (133-134s) Paralysis (black disease) of honeybees in Bulgaria
- KULINCEVIC, J., ROTHENBUHLER, W. & STAIRS, G. (142s) The effect of presence of a queen upon outbreak of so-called "bee paralysis" in the honey bee
- POLTEV, V. I. & NESHATEVA, E. V. (162s, 270-277) Experimental melanosis in bees caused by fungus *Aureobasidium pullulans* (de Bary Arnaud)
- BRETSCHKO, J. (111) Concerning the problem of bacterial septicaemia of the honey-bee (*Apis mellifera* L.)

## Nosema Disease 638.153.3

- MATUKA, S. & AGANOVIC, N. (151) The appearance of nosema among bee colonies in autumn
- HIRSCHFELDER, H. (132) Forage requirements of healthy and nosema afflicted bees
- STECHE, W. (176) Concerning the morphology of *Nosema apis* (Zander)
- GOCHNAUER, T. W., VANDERMEER, J. W., SIDDIQUI, J. R. & MURTY, V. L. N. (124-125s) Some products and properties of *Nosema apis* spores
- STECHE, W. (176) The relationship between the development of the parasite *Nosema apis* (Zander) and brood development of bees
- CHEREPOV, V. T. & KUZNETSOVA, N. F. (180-181, 285-291) Race variability of bee resistance to nosema
- GROBOV, O. F. (126s, 251-254) Resistance of *Nosema apis* spores to some biological, physical and chemical factors
- GROSS, K. P. (127) Does *Nosema apis* Zander develop resistance to Fumidil B?
- HANKO, J. (129) Methods of curing nosema disease by means of antibiotics
- BOGDAN, J. (110) The treatment of nosema in the northern part of the district of Moldau
- SHIMANUKI, H. & CANTWELL, G. E. (174s) The role of heat and ethylene oxide in nosema disease prevention

## Brood Diseases 638.154

- KOCJAN, L. (136) Extermination of brood affliction (A.F.B.): theory and practice
- TOSHKOV, A., VALERIANOV, T. & TOMOV, A. (178-179s) The method of immunofluorescence as a quick diagnosis of American foul brood
- ALEKSEENKO, F. M. & ASADOV, A. S. (103-104s, 241-247) Immunobiological methods of American foul brood diagnosis
- POLYAKOV, A. A., SMIRNOV, A. M. & KULIKOVSKII, A. V. (—, 278-284) Supramolecular structure of *Bac. larvae* and its modifications after the influence of disinfectants
- DISTEL, H. (116-117s) American foul brood and sulfathiazol
- MACHOVA, M. (148-149s) Sensitivity of individual strains of *Bacillus larvae* in reaction to various antibiotics
- KUNKHEV, K. (143s) Effect of some inorganic chlorides on the germination of spores of *B. larvae*

## Bee Poisoning 638.158.2

- LEVIN, M. D. (146) The effects of pesticides on honey bees in U.S.A.
- SELLIANAKIS, G. (173) Concerning the protection of honey-bees from pesticides
- SYOBODA, J. (177s) Poisoning of bees by the so-called harmless pesticides
- STUTE, K. W. (176-177s) Analysis of dead bees for determination of insecticides
- PETUKHOV, R. D. (161s, 265-269) Effect of phospho-organic pesticides on acetylcholine-esterase and carboxylesterase in bee tissues
- MOFFETT, J. O., MACDONALD, R. H. & LEVIN, M. D. (155) Toxicity of carbaryl-contaminated pollen to adult honey bees (*Apis mellifera* L.)

## Honey 638.16

- SIPÓS, E. (175) Honey quality and evaluation
- ASSYS, L. (106) Honey in Belgium
- VORWOHL, G. (184) German honey production
- LANGRIDGE, D. F. (144-145) Australian honey in relation to European standards
- KRÄMER, R. (139) Development of honey market and world honey trade from German point of view
- WILLSON, R. B. (186) Import standards for honey from the Western Hemisphere point of view
- HAHN, H. J. (128s) Determination of free amino acids of honey
- POPA, A., RACOUREANU, N., HICHERI, K., POPESCU, N., HULUTA, C., DOBRE, V., CAIRNU, J., BOGDAN, J. & TOADER, J. (162s) Research of radioactivity of bee honey
- RIGO, J. & SZELENYI, J. (167s) Experimental researches with acacia honey
- CHAIM, K. [KALMAN, C.] (113) Some recommendations on honey getting and processing
- TOWNSEND, G. F. (179) How the beekeeper can influence the quality of honey

## Beeswax 638.171

- ANTONESCU, C. (104) New procedure of wax extraction in the apiary by means of an original press with greater output

## Propolis and Royal Jelly 638.178

- POPRAVKO, S. A. (163-164s, 231-240) Secretion and identification of main components of propolis
- VAKHONINA, T. V., BREEVA, L. G., BODROVA, R. N. & DUSHKOVA, E. S. (—, 218-224) Some physical and chemical antimicrobial characteristics of propolis and extracts
- KIVALKINA, V. P. (136, 255-260) Effect of propolis on immunological reactivity
- BOGDAN, J. (110s) Experiments with the use of propolis in veterinary medicine in the valley of Dornelior
- MEL'NICHENKO, A. N. & VAVILOV, YU. L. (152s, 94-102) About the content of nucleic acids in royal jelly

## Pollen 638.178.2

- CÎRNU, I., SLUSANSCHI, H., TONE, E., FILIPESCU, H. & MARINESCU, R. (113s) Chemical composition of pollen from corn (*Zea mays*) and sunflowers (*Helianthus annuus*) harvested at various times
- GRIGORYAN, G. A., STEPANYAN, V. A., MARKOSYAN, A. A. & DANIELYAN, S. G. (126, 248-250) Microelements in pollen loads and in bees' organism

## Bee venom 638.178.8

- FORSTER, K. A. (120) Chemistry, pharmacology and therapeutical effectiveness of bee venom
- PETRESCO, A. & DEREVICI, A. (160s) Electron microscopic study of the lesions produced by bee venom in human embryo fibroblast cultures
- VASSILEV, V., STOIANOVA, L. & NINOV, V. (181) Therapy of rheumatism (heart-joint form) with lyophilized bee venom as an electrophoretic and phonophoretic method
- MEL'NICHENKO, A. N. & KAPRALOVA, O. V. (152-153, 218-224) Species regularity of physical structure of apitoxin
- ORLOV, B. N. (157s, 225-230) New information on the neurotoxic activity of apitoxin
- ARTEMOV, N. M., KIREVA, V. F. & POBEREZHSKAYA, T. I. (105, 203-210) Effect of apitoxin on permeability of capillaries and albumen content in blood

## Honeybees as Pollinators 638.19

- RUPP, K. (169) Investigations on pollination activity of honeybees  
 MCGREGOR, S. E. (148) Bee pollination of crops in the U.S.A.  
 FODOR, J. (120) Efficiency of pollination of sunflower plants with the aid of bees  
 LANGRIDGE, D. F. (145) The role of honeybees in pollination of apples  
 KURENNOI, N. M. (144, 187-191) The role of honeybees in regular fruit bearing of the apple tree  
 DAVYDOVA, N. S. (114, 176-180) Utilization of bees for grape pollination  
 HANSSON, Å. (129) Significance of bee pollination to yield of wild berries  
 MARKOSYAN, A. A. & MARKOSYAN, ZH. K. (150, 192-195) Utilization of bees for pollination of cucumber plants in greenhouses

## Other Bees 595.799

- ATWAL, A. S. & GOYAL, N. P. (107) Communication in the Indian honeybee *Apis indica* F.  
 ATWAL, A. S., GREWAL, G. S., KUMAR, S. & KAPIL, R. P. (106-107s) Nesting behaviour of *Andrena leaena* Cam. (Andrenidae : Hym.)  
 RÖSELER, P. F. (168s) Influence of forage activity on the functional conditions of some gland systems of bumble bees  
 ATWAL, A. S., KAPIL, R. P. & GREWAL, G. S. (107s) Biology and nesting behaviour of *Megachile lanata* Fab.

## Films

Films on bees and beekeeping were shown continuously during the Congress, in a separate hall, and these proved a great attraction, although it was not possible to discover when any particular film could be seen. Those listed in the handbook (page 40) are given below, under country of origin. The German handbook (pages 35-36) gives details of their length, whether in colour and/or with sound, etc.

### Austria

- A. SINGER: Life and death of a queen bee

### Czechoslovakia

- A. KANDERA: Migratory bee house

### Finland

- T. CARLANDER: no title

### France

- A. DENISET: "Guis' y frotte"  
 DR. P. LAVIE: Lavender nectar, riches of Provence  
 M. SANDEL: Alsatian honey

### Germany (D.B.R.)

- N. DIX: The queen and her colony  
 Bees and medical science  
*Apis*—marvel-bee  
 B. HESSLER: Honeybee  
 W. HOFFMANN: XXI International Apicultural Congress, Maryland, 1967  
 D. WALTENBERGER: About bees

### Hungary

- A. KOC SIS: Bees in agriculture  
 Hungary: land of honey  
 Bees

### Italy

- A. FERRARESI: New methods in beekeeping

### Morocco

- P. HACCOUR: Morocco—paradise for bees

### Norway

- G. L. KJELSEN: From the bee to the honey  
 E. VILLUMSTAD: Renewal of combs

### Sweden

- T. CARLANDER: no title

### Switzerland

- J. HATTENSCHWIELER: Honey sources in the forest  
 M. SPINNLER: Beekeeping

### U.S.A.

- DR. N. E. GARY: Mating behavior of the honey bee  
 V. JUNGFER: Honey, Nature's golden treasure

### U.S.S.R.

- SOVIET DELEGATION: Biology of the honeybee colony  
 Bees and plants  
 Diseases and pests of bees  
 Bee factory

Photographs and colour transparencies were also on show and, like the films, were entered in competitive classes. It is not yet known to whom the prizes were awarded.

## Apimondia

Meetings of Apimondia Committees and Commissions were held before and during the Congress. The General Assembly took place on the afternoon of the 7th. The reports presented are dealt with in full in the Apimondia *Bulletin* and in *Apiacta*.

Invitations for the XXIII Congress had been received from Argentina and the U.S.S.R., and the latter was finally chosen. So the next Congress will be held in Moscow in 1971, and the XXIV Congress possibly in Argentina in 1973.

## Exhibitions and other events

The exhibition was one of the outstanding features of this Congress. A spacious exhibition hall was available, and this, together with the covered and open "fair ground" outside, were used to good effect. As well as various German trade stands, and others from Austria, Czechoslovakia, France and Italy, there were exhibits by the beekeepers' organizations of Czechoslovakia, Germany, Hungary and Rumania.

A most valuable innovation, on a sheltered terrace, was a row of observation hives containing different races and strains of *Apis mellifera*. Nine of these, together with cordovan and chartreuse mutations, were provided by the Bee Research Institute at Oberursel near Frankfurt, and four others by the Bee Research Institute at Rybnoe, U.S.S.R. This may well have been the first occasion on which beekeepers could watch the behaviour, in the hive and outside, of most of the European honeybee races.

A display of material relating to German beekeeping in past centuries attracted much attention. A magnificent collection of equipment used in heather skep beekeeping in and around Lüneburg was put on show by the Heidemuseum in Celle, and other traditional hives and historical material were provided by the Naturkundemuseum in Freiburg and the Landesanstalt für Bienenkunde in Erlangen.

## Entertainment and excursions

The "excursion day" in the middle of the Congress had been missed in 1967, and it was enjoyed to the full this year, in the attractive Bavarian countryside. Some tours took members to the foothills of the Alps, with visits to Oberammergau, to the monastery at Ettal and the beautiful baroque church at Wies where one of the many *putti*—as well as St. Ambrosius himself—has a gilded skep. Others went east to Rosenheim or west to Landsberg and Weilheim. All saw something of German beekeeping—although many would have liked to see more.

Receptions for various groups were held by the Oberbürgermeister of Munich, and by organizations such as the Deutscher Imkerbund, the Arbeitsgemeinschaft der Institute für Bienenforschung, and Ehrenwirth Verlag—publishers of many bee books, who also had a display in the hall. These receptions gave the invited guests an opportunity to get to know some of the historical buildings of Munich, and to enjoy special Bavarian hospitality. At the Congress itself, the restaurants and cafes on the fair-ground were always well patronized during their opening hours, and they were of benefit to all.

The "accompanying persons" who came to Munich with Congress members shared in some Congress activities, and also had their own non-apicultural programmes. A visit to the Avon cosmetics factory seemed to be especially enjoyed, by men as well as women, and also the evening tour of Munich.

Everyone enjoyed the "folklore evening" staged in the Congress Hall on the first evening, and a mini-version of this was laid on at the farewell "banquet" given by the German Beekeepers' Association in the Mathäuser Bierstadt, a merry occasion with entertainment for all.

After the Congress, organized tours took members to various parts of Germany. The most ambitious went as far as Heligoland, and included much of interest.

