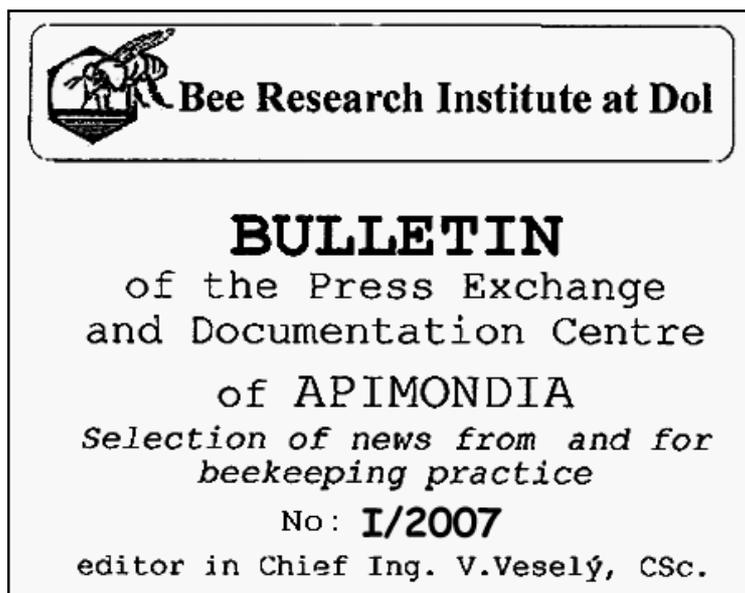


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638.124.24C

Graham, S - Myerscough, MR - Jones, JC et al.: **Modelling the role of intracolony genetic diversity on regulation of brood temperature in honey bee (*Apis mellifera* L.) colonies.** *Insect Societies*, 2006, 226-232.- 3 fig., many ref.

A worker's affinity for particular task may be genetically influenced and so some patrines may have lower stimulus thresholds for commencing a task than others. Authors investigated the effects of intracolony diversity in the task thresholds that stimulate workers to engage in heating and cooling during nest thermoregulation. Single patriline colonies maintained on average less stable brood nest temperatures than multiple patriline colonies. The other experiment performed in this direction proved the hypothesis that genetically based variability in task thresholds among patrines within honeybee colonies is an important contributor to the ability of colonies to precisely thermo regulate their nests.

581.331 (87)

Vit, P: **Melissopalynology Venezuela.** *APIBA-CDCHT Universidad de los Andes*, 2005, 205 pages

This book contains palynological descriptions and microphotographs for natural pollen grains of 140 species in 58 plant families from the reference collection, with a corresponding voucher plant specimen deposited in Flora Apícola Venezolana. The work includes only few species of the Venezuelan bee flora in comparison with the botanical rich fund of the country. All the micrographs were taken at x 400 magnification with a light microscope using x 40 apoplanar objective. Indices of pollen abundance, glossary for pollen morphology and many references are included.

638.153.3B

Mattila, HR - Otis, GW: **Effect of pollen availability and Nosema infection during the spring on division of labour and survival of worker honey bees (Hymenoptera Apidae).** *Environmental Entomology*, 2006, 3, 708-717. - 6 fig.

Examination of the effect of pollen supply in colonies during the spring on longevity, in hive behaviour and foraging patterns of Nosema infected and uninfected workers. In field colonies pollen supplements did not offset the reduction in worker life span caused by inoculation with Nosema apis. Workers from colonies that had pollen diet supplement lived longer, were more likely to be found in the brood area and were more active on the comb than workers reared in colonies with less access to pollen. Pollen availability and inoculation status did not affect brood care behaviour or foraging patterns.

579.62A

Baum, KA - Rubink, WL - Coulson, RN: **Trapping of feral honey bee workers (Hymenoptera: Apidae) in coastal prairie landscape: effects of season and vegetation type.** *Can. Entomol.*, 2006, 228-234. - 2 fig., 2 tab., 31 ref.

Capture rates varied throughout the year. The largest number of bees collected was from December through February when nectar and pollen availability were low. Capture rates also varied among vegetation communities. Traps located in the woodland community contained fewer honeybees than those located in live oak in February and live oak and brush land in December corresponding to lower estimates of nectar availability in the woodland. Few bees were collected during swarming periods. That is suggesting that most of the captured honeybees were searching for food sources. The number of honeybees collected in the traps provided a qualitative estimate of food resource availability.

638.162.3

Montilla, A Ruiz Matute, AI - Sanz, ML et al.: **Difructose anhydrides as quality markers of honey and coffee.** *Food Research International*, 2006, 801-806. - 2 fig., 4 tab., many ref.

Difructose anhydrides are pseudosacharides produced by condensation of two fructose molecules by means of caramelization reaction which takes place during heating of sugars or sugar rich foodstuffs. The target of this study was to evaluate the feasibility of difructose anhydrides as chemical markers of honey authenticity. Difructose anhydrides were analysed by gas chromatography coupled to mass spectrometry after conversion to their trimethylsilyl derivatives. Certain difructose

anhydrides were detected in honey added 5 % fructose and sucrose caramels and 15 % of glucose caramels. This study indicates that difructose anhydrides are useful chemical indicators to control honey authenticity.

591.530

Müller, A - Diener, S - Schnyder, S et al.: **Quantitative pollen requirements of solitary bees: implications for bee conservation and the evolution of bee flower relationships.** *Biological Conservation*, 2006, 604-615. - 2 fig., 3 tab., many ref.

Estimation of the number of flowers required to rear a single larva for 41 European bee species by comparing the pollen content of brood cells with the pollen quantity contained in the flowers of the bees' host plants and by deducing the pollen requirements from a regression model describing the relationship between the average bee dry body mass and the average brood cell pollen content. The flower requirements of the bee species examined vary by three orders of magnitude. Depending on the bee species and host plant, 7 to 1100 flowers from 0,9 to 4,5 flower heads are needed to rear a single larva. It was found that only about 40 % of the pollen contained in a flower was found available to a single female bee, these minimal figures have to be multiplied by a factor of approximately 2,5 to obtain realistic results of bee flower requirements. The amount of pollen lost from flowers for bee nutrition is surprisingly high. It is assumed that the recent decline of many bee species is caused in food shortage provoked by a decrease in flower diversity and quantity due to habitat destruction and modern methods applied in the agriculture.

638.144.54A

Mattila, HR - Otis, GW: **Influence of pollen diet in spring on development of honey bee (*Hymenoptera Apidae*) colonies.** *Journal of Economic Entomology*, 2006, 3, 604-613. - 8 fig., 1 tab., many ref.

In the experiment carried out in the period of 2002-2004 pollen supplemented and pollen limited conditions were created in colonies every spring and brood rearing and honey yields were subsequently monitored throughout the summer. Colonies that were supplemented with pollen or a pollen substitute in the spring the rearing of brood started earlier and most workers were produced by late April or early May. In 2002 these initial differences were reflected by a two fold increase in annual honey yields by September for colonies that were pollen supplemented during the spring compared with pollen limited colonies. In 2003 and 2004 differences between treatment groups in the cumulative number of workers produced by colonies disappeared by midsummer. All colonies had similar annual honey yields with one exception only. Discrepancies between years conceded with differences in spring weather conditions. An investment in supplementing the pollen diet of colonies would be returned for situations in which large spring populations are important. Long termed improvement in honey yields may only result when spring foraging is severely reduced by unfavourable weather. Supplementing pollen diet in the spring could provide long lasting benefits for the performance of their colonies throughout the year depending on the demands placed on each colony.

595.799

Hines, HM - Cameron, SA - Williams, PH: **Molecular phylogeny of the bumble bee subgenus *Pyrobombus* (Hymenoptera: Apidae: *Bombus*) with insights into gene utility for lower level analysis.** *Invertebrate Systematics*, 2006, 289-303. - 2 tab., 4 fig., many ref.

Of the 38 *Bombus* subgenera *Pyrobombus* is the largest containing 43 of the 239 *Bombus* species recognized by Williams 1998. The contribution includes species examined and their collection localities, voucher numbers and Gen Bank accession numbers. *Pyrobombus* like *Bombus* and *Alpinobombus* includes many cold adapted species and has a Holarctic distribution. Bumblebees have been reared on a large commercial scale for greenhouse pollination. *Bombus impatiens* (subgenus *Pyrobombus*) is reared in the United States and *Bombus terrestris* is reared in Europe. These two species are good for commercial use because they are widely distributed, produce relatively large colonies, are efficient pollinators for numerous greenhouse crops and are easily reared in captivity. Discussion concerns gene utility.

595.42A

Ruffinengo, M - Eguaras, M - Floris, I et al.: **LD₅₀ and repellent effects of essential oils from Argentinean wild plant species on *Varroa destructor*.** *Journal of Economic Entomology*, 2005, 3, 651-655. - 3 tab., many ref.

The lowest LD₅₀ values for mites were registered for *Acantholippia seriphoides* and *Schinus molle* after 24 hours, and for *Wedelia glauca* and *Acantholippia seriphoides* after 72 hours of treatment. The oil with the highest selectivity ratio was the one extracted from *S. molle*. Oils of *Lippia junelliana*, *Minthostachys mollis* and *Lippia turbinata* mixed with wax had repellent properties. None of the oils tested had attractive effects on *Varroa* mites.

582.765.2

Ayers, GS: **The Anacardiaceae - the Cashew Family.** *American Bee Journal*, 2006, 8, 853-857. - 10 fig., 21 ref.

Poison ivy *Toxicodendron radicans*, poison sumac *Rhus vernis* and poison wood *Rhus metopium* are bee forages. They are renowned for producing toxic phenolic substances in all their parts. But there are no reports of the toxic substances from these species causing ill effects as a result of consuming honey produced from them. These toxic substances are presumably absent in their nectar and their pollen. The honey from poisonwood is of high quality.

638.142.388.8

Parrot, JT: **Benefits and disadvantages of several winter hive wrapping strategies in Western Massachusetts: an SARE sponsored investigation.** *American Bee Journal*, 2006, 8, 863-865, - 4 fig.

The practice of wrapping beehives for the winter is not more applied, but the threat problems for sustainable beekeeping has led to experiments in the abandoned

wrapping. The applied practices were traditional wrapping (tar paper), heavy wrapping (blackened corrugated cardboard with closed foam insulation) and unwrapped control. It was found as result that heavy wrapping did not significantly improve the consumption efficiency of winter stores. But colonies that were wrapped in the paper lost significantly less weight than untreated hives. It is speculated that heavy insulation allowed for more cluster activity and low worker mortality throughout winter season. Experiments are to be continued.

638.1 (4)

Peroutka, M.: **International Institute for Beekeeping Economics and Technology - special interest for the 16th Congress of Apislavia.** *Vcelarstvi, 2006, 10, 253,256-257. - 7 fig.*

The congress was held in Slovakia August 17 - 20. The above-mentioned Institute (Romania) is now a member of Apislavia. Apart from organisation activities the representatives of individual countries reported about their beekeeping. Bulgaria indicates 600 000 bee colonies, honey consumption per year and head 0,25 kg. Poland has 1 300 000 bee colonies, state support for a colony 5 EURO.

Serbia produces 4 - 5 000 t honey annually, Macedonia has annual honey production 1600 t and 85 000 beekeepers. Byelorussia produces 3000 t honey, 80 % honey are produced by small beekeepers. The worst economic situation is in Romania price of honey is there lower than the price of sugar. 70 thousand Turkish beekeepers keep 4 200 000 bee colonies and honey production amounts 70 thousand t. No data are given about other Apislavia members like Russia and Hungary.

638.11

Webster, K: **Healthy beekeeping: now and in the future.** *American Bee Journal, 2006, 9, 755-757. - 7 fig.*

Americans are suffering now from trying the working of Nature into industrial and business model. Commercial beekeepers are moving their colonies and further to make ends meet. Migratory beekeeping may be unprofitable. Beekeepers must become experts at producing honey, pollen, queens and other bee products. The author tries to have a nice quiet life centred about beekeeping. People whose livelihood depends on the living things do not need huge amount of information. A small apiary is an advantage with sometimes useful model.

595.42A

Donovan, BJ - Paul, F: **Pseudoscorpions to the rescue.** *American Bee Journal, 2006, 10, 867-869.- 7 fig.,6 ref.*

Restoring pseudoscorpions to European bee colonies is to provide bees with natural protectors against their enemies mainly against Varroa mite. Pseudoscorpions have the potential to be restored to colonies of the European honeybee for non-chemical, self-sustaining biological control. It is assumed that beehives may need to be modified to provide breeding sites for these biological contra agents.

595.42A

Goodwin, M: **Varroa in New Zealand**, *Australian Bee Journal*, 2006, 9, 6,8,10. - 2 fig.

Varroa mite in New Zealand was now confirmed at two sites in the Nelson region 16 June 2006. Varroa was discovered by an urban hobby beekeeper. A ban was placed on the movement of all beehives and beekeeping equipment in the North island. 3022 apiaries were tested for the presence of varroa. The mentioned apiaries included 58 163 hives. A total of 284 apiaries with 4060 hives were found to be infested. The New Zealand economy is largely based on agricultural production, the potential impact of varroa were assessed much more seriously than in other countries. It is important that New Zealand has a register that records the location of most managed hives. Determining the spread of the mite was done with the assistance of numerous beekeepers.

638.1 (481)

Beekeeping in Norway 2005. *Biroekteren*, 2006, 9, annex 6

Norway's Association of Beekeepers has 3133 members. The questionnaire was filled by 408 of them. Average age of respondents was 57 years. Only 3 % were commercial beekeepers. Average apiary included 27 beehives. A beekeeper wintered on average 33 colonies. 21 % bee colonies were migratory hives. 45 % beekeepers indicated varroa in their apiary, 6 % indicated nosema disease, 16 % found chalk brood, 14 % wax moth. 65 % beekeepers perform varroa control by cutting out drone brood. 25 % beekeepers treat the colonies by formic acid in the autumn and 75 % by oxalic acid.

638.144.52B

Kirkevold, RR: **Water dispenser**. *Biroekteren*, 2006, 10, 303. - 2 fig.

O. Slavik, native in Czechia, inhabitant of British Columbia in Canada arranges a simple water dispenser. He prepares large cross section of wood near to the apiary. He puts large glasses full of water with perforated lids down on this section. As to prevent decoy he gives propolis into water, may be some drops of vinaigrette dispenser serves for a long time to full content.

The water flows slowly and the section is for bees constantly wet.

638.135

Quiroga, EN - Sampietro, DA - Vattuone, MA: **Propolis from the Northwest of Argentina as a source of antifungal principles**. *Catedra de Fitoqemica . Instituto de Estudios Vegetales Dr A.R. Sampietro, Ayacucho 471, San Miguel de Tucumán, 2002?*, 23 pages - 2 fig., 2 tab., many ref.

Ethanollic propolis extract was partially purified by cooling at -20° C. Partially purified propolis extracts inhibit fungal growth. The propolis from El Siambó Tucuman in Argentina is suitable source of antifungal products. Isolated compounds from the propolis, pinocembrin and galangin have the capacity of being used as antifungals without detriment of the equilibrium of agro ecosystems. It is assumed that there is a possible preparation of agrochemicals with reduced economic costs using a partially

purified preparation as the active substance.

638.16

Bogdanov, S - Biert, K - Kilchenman, V et al: **Rhododendron honey- a speciality of the Swiss mountains.** *Schweizerische Bienen-Zeitung*. 2006, 10, 18-21. - 9 fig., 2ref.

Two species of rododendron grow in the Swiss mountains, mainly in the Alps in the zone between 1400 - 2350 m. Less distributed *R. hirsutum* grows on basic soils, *R. ferruginosum* on acid soils. The flower time is from June until August. If they are near together bastards of both species occur. Sensory properties of these honeys are similar to those of black locust honey. They are light yellow and their odour is slight. They are differed from each another with difficulties. Glucose and water ratio is more than 1,7. They crystallise in the period from 3 to 6 months. In 10 g honey there are on average 12 600 pollen grains. Electric conductivity is 0,24 mS/cm, water content 16,1 g/100g. No one of these two honey is toxic.

638.1(84)

Heckert, D - Schoop, W: **Indians from the Andes as beekeepers in the Bolivian rain forest.** *Biene*, 2006, 10, 26-28. - 10 fig.

For more than 40 years ago Indians moved from the Andes to foothills. They settled in the region round Rio Ichillo, The population amounts 70 000 inhabitants who are still very poor. They keep Africanized bees to support their life. The problem is in honey marketing. Beekeepers' family consumes on average 30 kg honey per a year. The foraging near to inhabited places is in deficiency. The bee management at small beekeepers with up to 20 hives requires 30 work days, at beekeepers with 21 to 60 hives 120 work days and at beekeepers with more than 60 hives 200 work days. The extension of beekeeping is to be done first after more profound beekeeping education.

595.799 *Bombus terrestris*

Westphal, C - Steffan Dewenter, I - Tschardt, T: **Foraging trip duration of bumblebees in relation to landscape-wide resource availability.** *Ecological Entomology*, 2006, 389-394. - 2 fig., 1 tab.

To counteract the ongoing decline of bumblebees it is necessary to improve the spatial and temporal availability of resources in agricultural landscapes. The duration of foraging trips - when they are shorter - provides good conditions for good growth of colonies. Within 34 days colonies that had access to abundant resources gained more weight than colonies foraging on sparse resources. The shorter foraging trips translate into greater colony growth. Large scale resource availability is to be established for future.

633.491

Janke, M: **Honey bees in potatoes fields.** *Biene*, 2006, 10, 14-15.5 fig.

Flowers of potatoes do not offer nectar. Pollen collection for bees is only with difficulties and should be investigated. Nevertheless if more than 2000 aphids attack potatoes plants honeydew attracts bees. But growers in the same time spray the fields with pesticides and then residues in hives are found in the collected honeydew. This shows that it is necessary to take the respect to the fact that bees are endangered because they fly on treated potatoes for honey dew, propolis, water from the dew.

595.799

Westphal, C - Steffan Dewenter, I - Tschamtkke, T: **Bumblebees experience landscape as different spatial scales: possible implications for coexistence.** *Oecologia*, 2006, 289-300. - 3 fig., 3 tab., many ref.

Investigation was carried out on the effects of the landscape wide availability of different resources - mass flowering crops and semi-natural habitats - on the local densities of *Bombus terrestris*, *B. lapidarius*, *B. pascuorum*, *B. pratorum*. The densities of all bumblebees species were enhanced in landscapes with high proportions of mass flowering crops, mainly oil seed rape. The strongest effects were found for *B. terrestris* and *B. lapidarius* at large spatial scales with foraging distances of 3000 and 2750 m respectively. The coexistence in bumblebee communities could be mediated by species-specific differences in the spatial resource utilisation patterns. The larger bumblebees travel over larger distances than smaller ones and build up larger colonies through a better exploitation of food resources.

575.11

Müller, A: **Gen technology - what about its future?** *Bienenpflege*, 2006, 10, 313-315.

GM crops are grown for about twenty years. There are various opinions on their growth and utility. Most of GM plants are those ones that are prepared to build the resistance to pests. The research as well as practice works mostly with *Bacillus thuringiensis* which occurs in free nature, mainly in the soil. The above-mentioned bacterium is active as feeding poison for certain pests. In further development of plants it is necessary to respect the fact that the area of agricultural land per one inhabitant was reduced from 0,44 ha in the year 1960 down to 0,19 ha. The largest GM crops areas are in North and South America. The most intensive research in this field is carried out in the USA and China. No injuries to bees are found due to GM maize. Argentina has about 17 million ha GM crops (soya, maize). Germany imports from this county 17 000 t honey in a year and no discussion is about GM pollen. Germany expects a new law about the green gen technology.

638.178.B

Ogden, B: **The view from here** *Beekeeping*, 2006, 8, 170-172. - 2 ref.

Propolis collecting bees are specialised foragers. They are generally older bees with wax glands shrunken and atrophied. They add wax and saliva to the gum mix to form propolis. The resin-loaded worker is dragged around by the house bees as they attempt to help with the preparation process. The collection process is laborious and

time consuming. The poplars are main sources for the resins to make bee glues. Propolis has mechanical uses in the hive: coating internal hive walls and surfaces as slippery varnish, fills cavities, repairs and strengthens combs, reduces entrances, is used for encapsulation. The biological uses of propolis in the hive are: restriction of putrefaction, protection of brood. Popular beekeeping literature stresses health-encouraging attributes, but propolis is a variable product and so is dependant upon its components parts. Research in this field shows only a small number of records. The same concerns propolis as miticide.

638.121

Brockmann, G: **Regulation of bees by scent.** *Biene*, 2006, 10, 11-13. - 9 fig.

Bees are attracted on a longer distance to flowers by colours, if flowers are near then bees are attracted by the scent. Bees may be trained on the scents of foraging plants. The training of colonies on flower scents increases the harvest of the crop. At the present time the training and regulation of bees in Europe is less practised. In the USA with large areas of pure plant stands, e.g. blue berries bees, have no other foraging than these stands. They cannot achieve other more attractive crops. If the beekeeper wants to eliminate the foraging on rape source as to receive, e.g., silver fir honey he is to put rape flowers into sugar solution with calcium chloride. The solution is so nasty that bees omit rape flowers and visit silver firs.

638.16 (485)

Sveriges Biodlares Riksförbund: **Honey consumers are deceived.** *Bitidningen*, 2006, 10, 3.

Swedish beekeepers require the amendment of the EU Honey directive. The directive permits the honey sale on the market with such label as "blend of EU honey and non EU honey". It is not required to give content of the individual types of honey. Consumers want to know where the honey comes from and if the honey is a blend the label is to indicate in what quantity. Swedish beekeepers start to fight for Swedish honey. Minister of agriculture must actively work on the amendment of the EU directive. The present directive is on the side of honey importers. The article is an open letter to the Minister of agriculture.

638.1 (485)

Gierchatowski, P: **E. Österlund, chiefeditor of Bitidningen about Swedish beekeeping.** *Pszczelarstwo*, 2006, 10, 7-8. - 1 fig.

Interview. There are 10 000 beekeepers in Sweden. There are two associations of beekeepers, most beekeepers own small bee yards; professional beekeepers are in a minority. The largest bee farm has 700 bee colonies. Average honey yield per a hive is 100 kg, exception to 190 kg, in weak years even 10 kg. Sweden is not honey self-sufficient. Honey is imported from Hungary, Denmark, and other European countries, from Argentina, not from China. Bees gain nectar, mainly from rape and white clover, an important source are various weeds, forest plants. Sweden has not black locust. Lime tree is rare. At the season's end, in July, spruce honeydew occurs. Nearly all beekeepers keep Buckfast and Elgon bee, here and there is Carnica and

Italian bee. In North Sweden there is a preserve for dark bee. Editor does not use medicaments against the mite varroa. He bets on small comb cells. Instead the cell 5,6 mm he recommends the cell size 5,1 mm in the first phase, later even 4,9 mm. Most beekeepers use Apistan against varroa. The most serious problem for Swedish beekeeping are varroosis and viruses.

595.798.Vespa velutina

Becker: **Vespa velutina, a new predator of honey bees in France.** *Fruits et Abeilles*, 2006, 10, 320. - 3 fig.

This Asian hornet has been detected in the region Lot et Garrone. In difference from the European hornet its thorax is velvet brown black and abdominal segments are brown. It is a predator of bees and social wasps, is not more aggressive than the European hornet, lives on eggs and larvae when attacking hive or nest of social wasps. In China bees *Apis cerana* and *Apis mellifera* defend colonies against this predator forming a ball round the hornet and by frenetic contraction of muscles increase the temperature in the ball centre up to 51 °C and the hornet dies, honey bees tolerate temperature to 51,8 °C. The venom of this hornet is not explained, but mainly children may be endangered. *Vespa velutina* has come to Europe by transport of fruits or exotic wood from China.

638.12

de la Rúa, P - Canovas, F - Galián, J - Serrano, J: ***Apis mellifera iberiensis***. *Vida Apícola*, 2006, 139, 42-53. - 4 fig., many ref.

In the last ten years a detailed analysis was carried out on the genetic properties of the Murcia bees, on protection and selection of local populations, genetic diversity of main land peninsular bees and insular bees (Balears and Canarian islands). The analysis shows that it is difficult to conserve honey bee populations on a big huge and vast areas like Andalusia or Meseta. It is recommended to consider the conservation of local populations that represent better adaptation to the environment. In this way families that deserve selection are better known. They are to be selected from all points of view: molecular, ethologic, morphologic, resistance to diseases, productivity and hygienic behaviour. After this cognition preserves of autochthon bees with good production abilities are to be established on separate localities where there is no risk of an influence of other managed introduced bees or bees moved by migratory beekeeping. The analysis showed iberic bees in 12 haplotypes of African type and 13 in Western European type.

638.145.54A

zeta: **Instrumental insemination workshop.** *Vcelar*, 2006, 9, 133. - 1 fig.

The first workshop on instrumental insemination of bee queens was held in Slovakia for three days in June 2006 in Liptovský Hradok. The theoretical part was lectured by the director Kopernický. The practical workshop in the instrumental insemination was done by Ing. Titera from the Bee Research Institute DoI, Czechia. Leading persons from the science of animal production in Slovakia support the activities.

638.16

Lnenicka. V: **Cost price of honey in Germany.** *Včelarství, 2006, 10, Supplement, Discussion IV*

Maximal price of 1 kg honey indicates lavender honey from France 9,30 EURO. Other high prices show heather honey from France 8,70 EURO, manuka honey from New Zealand 7,35 EURO, heather honey from Norway 7,40 EURO. The cheapest honey is from Central and South America, middle yellow flower honey 2,30 EURO per 1 kg.

638.1(94)

Petrova, D: **Beekeeping in Australia.** *Včelarství, 2006, 10, 262-263. - 6 fig.*

In Australia hive density is quite low. There are in total only 673 000 bee colonies. More than a half of them are in possession of commercial beekeepers. A commercial beekeeper owns more than 500 hives. Main nectar source for bees are mainly eucalyptuses like spotty gum, stingy bark and iron bark. Forests are mainly state property and beekeepers are to rent plots for bee yards. Details of beekeeping are explained on a marriage pair who own 30 hives and now and then carry out migratory beekeeping. Annual honey production is 98 kg. Popular bee is Italian bee, because of golden colour, docility and good foraging.

575.1

Partridge, L - Gems, D: **Beyond the evolutionary theory of ageing, from functional genomics to evo-gero.** *Trends in Ecology and Evolution, 2006, 6, 7 pages. - 3 fig., 59 ref.*

Individuals of the same genotype differ greatly in their rate of ageing. The extreme longevity of social insect queens relative to workers of the same genotype and of parasitic relative to free-living forms. Recent experimental findings have entered the way for evolutionary approaches and bring substantial contribution to the biology of ageing. A question is about long-lived mutants as a challenge to evolutionary biology. Explanation is made on the molecular basis of ageing and longevity. Evolutionary biologists should not underestimate the intricacies of biological systems.

638.153.38-083

Dominguez, D - West, M - Torres, J et al.: **Evaluation of fumagilin effect on the production aspects and economics in bee colonies with noseosis.** *Vida Apícola, 2006, 139, 54-58. - 2 fig., 5 tab.*

The experiments compared honey production of bee colonies treated by fumagilin and production of non-treated control bee colonies in Buenos Aires province in Argentina. There were 110 hives in total, 15 were cured each 7th days and the rest 15 were without treatment. From both groups each 20 days sample were taken as to determine spores and after the season the production quantity was counted. The treated colonies offered by 88% higher yield than untreated. The average honey production of a treated colony was 25 kg and that one of the control colony only 11,4 kg. The economic difference between these groups achieved 181,95 USD.

Foix, AO - Pajuelo, AG: **Archaeological beekeeping finds on the Iberic peninsula.** *Vida Apícola*, 2006, 139. 12-17. - 3 fig., many ref

The history of the Iberic culture starts from the prehistory. It is assumed that the apiculture spreads apart from other countries like Iraque from Egypt. There are wall paintings showing the management of bees since 2400 years B.C. Traditional beekeeping on Balear islands is similar to that one applied in Egypt. Ceramic hives in the iberic culture are found for more than two thousand years. Iberic ceramic hives are of cylinder type with diameter 24 and 29 cm and are 53 and 58 cm high. Other finds include funnels, which apparently were used as filters of honey. (The filter substance was esparto in the upper hole of funnel). Other finds are vessels for the honey store and transport. In the Iberic deposit in Valencia a find was a beekeeping knife. The new archaeological methods confirmed that special vessels were used for fruit conservation in honey. Honey like milk was symbol of the fertility. Honey is not only food but represents the spirituality. Honey establishes contacts of the mortals with the divinity.

638.16

von der Ohe, W - Beckh, G - Camps, G et al.: **Contribution to harmonization of labelling the botanical origin wild flower honey.** *Deutsche Lebensmittel-Rundschau*, 2006, 8, 365-368. - 2 tab., many ref.

At the present time honeys labelled as Wild Flowers Honey has been established on the market. This means a supplement of the botanical origin. In this case wild flowers honey pureness and correct labelling can only be ascertained by microscopic pollen analysis. The honey must be prevailingly of wild flowers origin. A table gives honey proveniences - countries - really suitable for the wild flower labelling (Belize, Brazil, Chile, Cuba, El Salvador, Greece, Jamaica, Kenya, Croatia, Mexico, Serbia, Spain, South Africa, Taiwan, Tanzania, Thailand, Turkey, Zambia). Sort honeys cannot be labelled as wild flower honeys.

576.858

Chen, Y - Evans, J - Feldlaufer, M: **Horizontal and vertical transmission of viruses in the honey bee *Apis mellifera*.** *Journal of Invertebrate Pathology*, 2006, 152-139. - 5 fig., many ref.

Transmission of viruses can occur through two pathways, horizontal and vertical transmission. In horizontal transmission viruses are transmitted among individuals of the same generation. Vertical transmission occurs from mother to their offspring. Because of its highly organized social structure and crowded population density the honey bee colony represents a risky environment for the spread of disease infection. Like other plants and animal viruses bee viruses use different survival strategies including utilization of horizontal and vertical routes to transmit and maintain levels in a host population. Although Varroa mites have been confirmed as vectors in transmitting and activating bee virus infections the mechanism if mite mediated transmission is uncertain. Varroa mite is likely a biological vector for bee viruses. Horizontal transmission is strongly dependent on the production of big numbers of pathogens. Vertical transmission is directly dependent upon the survival and

reproduction of the hosts of the viruses. Many questions are to be answered by newly developed tools in the hands of researchers in Beltsville.

595.42A

Gracia Salinas, MJ - Ferrer Dufol, M - Lattore Castro, E et al.: **Detection of fluvalinate resistance in Varroa destructor in Spanish apiaries.** *Journal of Apicultural Research*, 2006, 3, 101-105. - 2 fig., 2 tab., 16 ref.

In Spain, previous studies did not detect resistance of *Varroa destructor*. But due to research of Milani in Italy authors assessed resistance to the fluvalinate at the diagnostic concentration (200 mg/kg). Some mites were resistant to fluvalinate. This prompt detection reduces the loss of bees and helps to prevent the spread of resistant strains. It was confirmed that the mite control strategies cannot be based on chemical treatment only. More biorational strategies are to be implemented in the fight against the *Varroa* mite.

595.42A

Kamler, F: **Do we apply atomisers correctly?** *Včelarstvi*, 2006, 11, 298-299. - 3 fig.

Ecological control of *Varroa* mite is less effective. Since end November to the solstice bee colonies have minimum of sealed brood. This is the period for effective one-shot treatment by aerosol. Temperatures are usually lower than 10 °C and atomisers help to remove all remaining mites. Bee Research Institute Dol produced and produces following atomisers: VAT-OC-2200. VAT-3, VAT 1a. Instruction for the atomiser's application include also warning because small aerosol particles (if health rules are not respected) penetrate not only bee cluster but also blood of the operator. The intoxication prevention inclusive respirator use must be kept.

595.42A

Branco, MR - Kidd, NAC - Pickard, RS: **Comparative evaluation of sampling methods for Varroa destructor (Acari: Varroidae) population estimation.** *Apidologie*, 2006, 4, 452-461. - 3 fig., 28 ref.

Tests compared three sampling methods to estimate the size of mite population: killing the mites with a miticide, estimating the infestation level in adult bees and brood cells and sampling the natural mortality of the mite. A good linear relationship was found between the three methods. The considered most reliable method for mite estimation is to kill all the *V. destructor* in a colony by chemical products. This method may be accepted as an absolute population estimate if no resistance to the acaricide is observed. But this method cannot be used in a periodical sampling experiment. A reliable method is the sampling of natural mortality but the colony must be brood right and not collapsing. Sampling the natural mite mortality is an excellent method for periodical use.

595.799 Bombus

Velthuis, HHW - van Doorn, A: **A century of advance in bumblebee domestication and economic and environmental aspects of its commercialization for**

pollination. *Apidologie*, 2006, 4, 421-451, - many ref.

Historical review on the progress in a century. Five species of bumblebees are currently used for crop pollination of agricultural crops. The most important is *Bombus terrestris* from Eurasia and *Bombus impatiens* from North America. Best result in rearing of bumblebees is at 27 °C and 65 % relative humidity. Storage at hibernating queens is in a refrigerator. For colony initiation a daily light period of eight hours gave the results. Queens of European species mate mostly only once. Mating usually lasts at least half an hour in *B. terrestris*. In the mating cages the percentage of mated queens is around 75 %. Artificial insemination has been tested recently. A list of countries with commercial bumblebee rearing includes in Europe Belgium, France, Germany, Italy, the Netherlands, Norway, Russia, Slovakia and Spain. The paper gives an overview of all activities in bumblebee rearing, application and economic aspects.

638.121.2

Wegener, J - Zautke, F - Höcht, S et al.: **Suppression of worker fertility in the honeybee (*Apis mellifera*) by treatment with X-rays.** *Journal of Apicultural Research and Bee World*, 2006, 1, 27-32. - 6 fig., many ref.

Egg laying worker bees can be suppressed by irradiation, The radiated bees show signs of somatic damage. A radiation dose of 20 Gy applied to capped brood of different ages successfully suppressed egg laying by the irradiated bees. Mortality was highest in the groups irradiated shortly after capping. Development of hypopharyngeal glands and cell building activity were reduced by irradiation. The usefulness of irradiated workers for breeding from single workers is really problematic.

638.1(489)

Brenner, S: **Why do they cease the beekeeping?** *Tidsskrift for Biavl*, 2007, 10, 313. - 1 tab.

The Danish Association of beekeepers has at the present time 3663 members in comparison with the year 2003 by about 150 less. But in contradistinction to the year 2005 the development of member basis is getting better. A questionnaire was sent to all former members as to know the reason for the end of their membership. 64% former members give that they do not own bees, 17% give that they cannot pay the member fee, 10% see the reason in allergy, others give for the ceasing the membership low honey yield.

638.124.428.A

Holst, N - Kryger, P - Meikle, WG: **Portrait of a bee wax comb.** *Tidsskrift for Biavl*, 2006, 10, 316-318, - 14 fig.

If the queen is in the best condition she lays about 2000 eggs per day, i.e. 1 egg in a minute. Three weeks later the honeybee has consumed about 150 mg honey and 130 mg pollen. During five months the queen can deposit about 200 000 eggs. That responds to larvae food 30 kg honey and 30 kg pollen. All this food is hidden in wax combs. 1/2 g honey or 1/4 g pollen is in a cell. About at least 60 000 and 120 000

pollen cells are filled and cleared. Queens prefer laying of eggs in central position, close to cells which already contain eggs or brood. Foraging bee loads pollen in any occasional available cell. The most part of season more nectar than pollen is collected. Near to brood the cells are without interruption cleared by nurse bees as far as brood is open.

576.85

Basim, E - Basim, H - Özcan, M: **Antibacterial activities of Turkish pollen and propolis extracts against plant bacterial pathogens.** *Journal of Food Engineering*, 2006, 992-996.- 2 tab., many ref.

The in vitro antibacterial activities of Turkish pollen and propolis extracts were investigated against 13 different species of agricultural bacterial pathogens. Among the tested bacteria *Agrobacterium tumefaciens* was the most sensitive one to 1/5 concentration of pollen extract. *Pseudomonas syringae*pv. *Phaseolicola* was the most sensitive one to 1/10 concentration of propolis extract. The least active concentrations towards the tested bacteria were 1/100 of the pollen extract and 1/1000 of the propolis extract. The study is considered as the first report on the antibacterial activities of pollen and propolis against the plant pathogenic bacteria.

638.139.2

Dimou, M - Katsaros, J - Tzavella Klonari, K - Thrasyvoulou, A: **Discriminating pine and fir honeydew honeys by microscopic characteristics.** *Journal of Apicultural Research and Bee World*, 2006, 2, 16-21. - 4 fig., 5 tab., many ref.

A microscopic analysis was made on 73 samples of *Abies cephalonica* and *Pinus* sp. honey from four regions of Greece during the year 2004. Six fungal genera and urediospores of rust fungi were identified. Fir honeys had a smaller ratio of honeydew elements to pollen grains and lower abundance of honeydew elements than pine honeys. *Coleosporium* spores were present only in pine honeys. The results of the analysis show that the botanical origin of pine and fir honeydew honeys can be possibly distinguished by microscopic analyses.

579.62A

Schmid, A - Hochn, H - Schmid, K et al.: **Effectiveness and side effects of glue traps to decrease damages caused by *Byturus tomentosus* in raspberry.** *J. Pest Sci.*, 2006, 137-142. - 1 fig., 5 tab., 14 ref.

In organic production no synthetic insecticides are permitted. The above-mentioned pest was therefore controlled by glue traps used for mass trapping. The white sticky trap type Rebell bianco was the most attractive for *Byturus*. The attractiveness was fortunately for the beneficial (like honey bee) relatively low, except when too much glue was applied on the traps. Then the attractiveness for honey bees increased significantly.

638.165.868.32B

Hornitzky, M - Ghalayini, A: **Honey produced from genetically modified canola**

(Brassica napus) nectar will not need to be labelled as a GM food under current Australian guidelines. *Australian Journal of Experimental Agriculture*, 2006, 1101-1104. - 2 fig., 1 tab., 7 ref.

The canola pollen content by dry weight in a range of canola honey samples from diverse geographical areas in Australia is well below the 1% threshold, below which labelling of genetically modified crops is not required. This article confirms that honey derived from genetically modified canola crops does not need to be labelled as a GM food.