THE NEW ZEALAND BEEKEEPER

NOVEMBER, 1969

THE NATIONAL BEEKEEPERS' ASSOCIATION of N.Z. Incorporated

BRANCHES

FAR NORTH
President: Mr. D. D. Matthews, Awanui Road, Kaitaia.
Secretary: Mr. M. D. Haines, P.O. Box 284, Kaitaia.

NORTHLAND
President: Mr. A. G. Tucker, 35 King Street, Whangarei.
Secretary: Mr. Des Cullen, 15 Grey Street, Whangarei.

AUCKLAND CENTRAL
President: Mr. J. Brookfield, 26 Liverpool Avenue, Papatoetoe.
Secretary: Mr. P. W. Keenan, 54 Patteson Ave., Mission Bay.

WAIKATO
President: Mr. P. D. Carey, Longview R.D. 2, Huntly.
Secretary: Mr. H. N. Tuck, Kihikihi, Waikato.

BAY OF PLENTY
President: Mr. G. C. Higgins, Waihi.
Secretary: Mr. A. C. Barrow, 71 Cameron Road, Te Puke.

HAWKES BAY
President: Mr. I. Berry, Box 16, Havelock North.
Secretary: Mr. R. N. Morse, C/O Vidals Vineyard, R.D. 2, Te Awanga.

C/S. HAWKES BAY
President: Mr. D. L. Ward, Guy Street, Dannevirke.
Secretary: Mr. E. Rowe, 6 Runciman St., Dannevirke.

NELSON
President: Mr. M. O. Burke, 36 Beachville Cres., Nelson.
Secretary: Mr. W. R. Cox, 19 Ulster Street, Wakatu, Nelson.

WEST COAST
President: Mr. J. V. Glasson, Blackball.
Secretary: Mr. T. Holland, Weenink Road, Karoro, Greymouth.

CANTERBURY
President: Mr. R. R. Bushby, 193 Wairakei Rd., Christchurch.

SOUTH CANTERBURY
President: Mr Eric Robins, Pleasant Point.
Secretary: Mr. M. D. Cloake, Fairview, 2 RD, Timaru.

NORTH OTAGO
President: Mr H. S. Wilson, 2C R.D., Oamaru.
Secretary: Mr. R. B. Mackie, 52 Frome Street, Oamaru.

OTAGO
President: Mr. C. W. Foote, 377 Kaikorai Valley Rd., Dunedin
Secretary: Mr. W. R. Sanson, 9 Warwick Street, Dunedin.

SOUTHLAND
President: Mr. W. T. Herron, Greenvale, Waikaka.
Secretary: Mr. S. M. Booth, Drummond, R.D.4, Invercargill.

THE NEW ZEALAND BEEKEEPER
VOL. 31 No. 4

Published Quarterly in February, May, August and November, by the National Beekeepers' Association of New Zealand (Inc.) in conjunction with the N.Z. Honey Marketing Authority.

Subscription: £1.50 per annum, post free

Registered for transmission by post as a Magazine.

Editor: Leslie W. Goss

NOVEMBER, 1969

CONTENTS

	Page
Swarming and Its Control by Ivor Forster	4
HMA Election Results	9
Can Anything Be Done to Reduce Queen Losses? By R. S. Walsh	10
NBA Executive Meets	13
Test Feeding on Industrial Sugar	16
Apiary Investigations and Field Work	18
Letters to the Editor	20
HMA—Chairman's Statement	24
Commentary from the Editor's Desk	26
Beekeepers' Technical Library	29
Branch Notes	30
A Bee in My Bonnet by D. W. Roberts	32
Some Comments on Ministerial Statements by J. Barber	34
Comb Honey Producers Association	34
A Queen Rearing Venture in Rarotonga by A. H. Simpson	36
The African Bee in Brazil	38
Beekeeping Seminar at Ruakura	41
Beekeepers to Tour Canada	41
Dance or Smell? by Ernest Douglas	42
Beekeepers' Magazines	43
Classified Advertisements	44

Health Department to Take Over . . .

CLEANLINESS in honey houses and extracting plants has been subject to the Food Hygiene Regulations for a long time, but although responsibility for hygiene has rested with the Health Department, enforcement of the Regulations where necessary has been left to Apiary Instructors employed by the Department of Agriculture.

The situation has not been a happy one in that some instructors felt themselves to be in a difficult situation because of their close and friendly relationship with the beekeeper. Their prime purpose is to co-operate with beekeepers in the efficient management of their apiaries, the detection and prevention of disease, and to take appropriate action should notifiable disease be detected.

Some Apiary Instructors understandably felt that they could do no more than point out to owners of sub-standard premises that improvements were necessary and desirable, but baulked at reporting the facts to the Health Department to ensure that action was taken.

It might be said, and with perhaps some justification, that Apiary Instructors were not doing their job, but at the same time the human factor and relationship must be understood and appreciated. It might well be distasteful to be in-

structor for one department and policeman or enforcement officer for another.

We must not close our eyes to the fact that some honey houses do not reach the standards of cleanliness which might reasonably be expected. Indeed, some are untidy and dirty and there can be no doubt that but for the very fact of honey being a sterile substance, action would have been taken where contamination had occurred.

A broad outline of the Food Hygiene Regulations 1952 was published in the November 1964 edition of this journal, and basically they will remain unchanged in a revision and consolidation of the requirements now in the course of preparation by the Health Department which will require all producers and packers to be registered with their local Authority. It is anticipated that a registration fee will be payable as, for example, at present exists for the registration of bakeries, butchers or other premises where food is handled.

It must be emphasised that Health Department inspectors can only exercise their authority within the jurisdiction of the relevant Health Department Regulations and cannot enforce unreasonable demands of their personal creation. It might be highly desirable to have a settling tank of stainless steel or solid gold but it would be unreasonable, and any direction for improvement given by an inspector must be in conformity with the Regulations and be subject to appeal by the beekeeper if he feels aggrieved or has been dealt with harshly and without just cause.

The Health Department carry out a valuable service to the community in seeing that premises where food is handled for human consumption are maintained at a reasonable level of cleanliness, and that vermin of all kinds are eliminated as far as possible. Despite these necessary precautions, food kitchens in some public restaurants are revolting, and were it not for the truism "what the eye does not see, the heart does not grieve for", the dining room would undoubtedly be empty. By the same token we must acknowledge that some beekeepers are slovenly in their personal habits, and their habits are reflected in their honey houses and equipment.

The vast majority try to keep their premises as clean as possible, and handling a sticky substance does not make matters any easier. No inspector or the Health Department can expect or demand the impossible.

The fact that responsibility for enforcement of reasonable standards of cleanliness will fall squarely and fairly on the shoulders of local inspectors supported by the Health Department Regulations will be a good thing for the industry as a whole, and the average man has nothing to fear that implementation will be to his disadvantage or jeopardise his business. But the man who has consistently neglected to conform to reasonable standards will find that he will be compelled to make necessary improvements or be closed down completely from handling food. For wilful infringement of the Regulations the offender may be brought before a

magistrate, and if found guilty his licence suspended until required improvements are carried out. No reasonable person could complain on that score.

In conformity with Departmental practice, the courtesy of consultation will take place between the Executive of the National Beekeepers' Association and the Department of Health before implementation of amendments to the Food Hygiene Regulations necessitating registration of all premises where honey is prepared, and as much advance information will be provided in these pages as possible.

It is abundantly evident that the Regulations and their enforcement will be fair and reasonable and to the ultimate benefit of the consumer and the producer. There are many within the industry who think the reforms to be long overdue.

Undoubtedly, for some smaller men who have completely unsatisfactory premises there will be the problem of capital to erect a honey house and obtain equipment in conformity with even reasonable requirements. Efficient extractors, storage tanks, wax presses and other equipment of the trade represents a large overhead in relation to the comparatively short time of actual useage.

Here then, is an opportunity for smaller self employed men to get together on a co-operative basis and pool their resources to buy jointly owned premises and equipment. There is nothing new in this suggestion, and it is carried out effectively and efficiently overseas. Good ideas are always worthy of copying.

OBITUARY

ALLAN R. EAGLE, secretary of the Canterbury branch of the National Beekeepers' Association, died suddenly in church on Sunday, September 28.

Platitudes spring easily to mind when faced with unexpected sorrow at the loss of a friend, but in Allen's case there could never be a greater truism than that "he was a good bloke", devoted to his hobby of beekeeping and assisting other members of the craft, and carrying out his duties as branch secretary with great efficiency.

When other branches failed to forward details of the activities for publication in the journal, Allen could always be relied upon to have his 'copy' there on time.

During the currency of Conference at Christchurch two years ago, Allen gave unstintingly of his time and organising ability to help in making the gathering an outstanding success, and there will be many who will retain the pleasantest of memories of their association with him.

Beekeeping as a whole, the Association and enthusiastic amateurs in Canterbury in particular will be the poorer for his passing.

Our deepest sympathies are extended to his widow, Mrs Eagle, in her irreplaceable loss.

SWARMING and its CONTROL

by I. W. Forster

Wallaceville Animal Research Centre, Wellington

(This paper was given at the Hamilton Seminar)

The seasonal development of honey bee colonies appears to bring about a physiological urge on the part of certain colonies to swarm (Simpson, 1962), swarming being the colonies' method of reproduction. The instinct to reproduce is common to all animals, and swarming must be accepted as an intrinsic part of bee behaviour. However, swarming is undesirable because colonies that swarm seldom produce a worthwhile honey crop.

Swarming is usually initiated by a colony building and stocking queen cells. When these are ready to hatch, the old queen accompanied by 50% to 90% of the bees, leaves the hive to found a new colony (Simpson, 1958 a). This prime swarm may be followed by small after-swarms with virgin queens.

Should hive conditions become unacceptable to the colony, for example because of very severe overcrowding or acute food shortage, a swarm, representing a very large proportion of the bees, may leave without queen cells being started. In extreme cases the entire population may depart (Simpson, 1962). Under normal conditions, the strains of bee developed in New Zealand rarely produce such absconding swarms and they are not considered in this review.

STRAINS OF BEE

The propensity to swarm varies among races and strains of bee. It is so pronounced in some strains of Carniolans as to render them unsuitable for honey production (Root, 1959; Adam, 1951).

Much can be accomplished by selective breeding of non-swarming strains of bee but it has not proved practicable to eliminate swarming entirely. The problems of controlling the mating of bees, and the necessity of maintaining colonies under conditions promoting swarming to accelerate selection of desirable strains, are the main limiting factors (Simpson, 1958 a).

SIGNS

Many beekeepers consider that the building of queen cups is an indication that a hive is preparing to swarm (Simins, 1904; Kumko, 1963). Allen (1965) found that the building of queen cups is common to all hives; their presence in no way indicated an intention to swarm. Simpson (1959) found that nearly all colonies produce queen cups during the season, and Forster (1961) showed there was no significant association between the presence of queen cups and the tendency of colonies to raise queen cells. Thus all the evidence shows that the presence of queen cups in a hive does not indicate that the colony is disposed to swarm.

The only visible sign of a colony's intention to swarm is the rearing of young queens in the presence of a laying queen. However, such swarm cells are often destroyed by the bees without the colony actually swarming. Furthermore, since queen cells may be raised in the presence of a laying queen for the purpose of supersedure, clearly their presence does not necessarily indicate that swarming will take place.

SUPERSEDURE

Swarm cells, although produced under similar conditions, are usually more numerous than supersedure cells (Grout, 1963; Simpson, 1960 a), and can be recognised in other ways. Most beekeepers classify queen cells as swarm cells if they exceed an arbitrary four or five per hive. Allen (1965), during two seasons'

observations, found that colonies raising less than six queen cells superseded while those raising 29 to 36 swarmed. Swarm cells are generally the same age, while supersedure cells are of different ages. Swarm cells are developed more on the edges of the comb than are supersedure cells which tend to be located on its face. Swarm cells are usually whiter than supersedure cells (Grout, 1963). Despite the difficulty of clearly differentiating between the two types of cell, beekeepers place some reliance on their ability to distinguish them.

There is much evidence that the behaviour patterns preceding swarming and supersedure are initially the same. Since the aim of each process is replacement of the old queen, apparently a colony is not committed to either course when queen cells are first started but may swarm or supersede according to the conditions prevailing when the cells reach maturity.

QUEEN SUBSTANCE

Bees receiving insufficient queen substance will commence rearing a queen either for swarming or supersedure (Butler, 1959). Lack of queen substance is usually due to short-comings in the queen. Simpson (1958 b) states "it seems possible that the capacity of queens to produce queen substance varies with their age, genetic characteristics, or conditions of rearing, and that the tendency of their colonies to swarm is determined accordingly."

Crowding of bees in a hive may lead to swarming because the normal distribution of queen substance is restricted, and many bees are deprived of it (Butler, 1959). Allen (1955) observed that workers lick the queen mostly when she is stationary. Butler (1959) cites several authors who observed that, in colonies about to swarm, the queen is often harried by the workers, and forced to keep moving about on the combs. He suggests this may hinder the workers from obtaining queen substance.

In both crowding of the hive and harrying of the queen, lack of queen substance is a secondary rather than a primary cause of swarming, but the link between deficiency of queen substance and swarming, even when the queen appears satisfactory, is explained.

If a deficiency of queen substance may cause either swarming or supersedure, an additional factor must decide which of these will occur (Butler, 1959). Butler (1959) considers that an acute shortage of queen substance may cause swarming, and a moderate shortage, supersedure.

Shortage of queen substance may cause swarming only when it coincides with that stage in the cycle of colony development when the physiological urge to reproduce by swarming is initiated. At other times it may cause queen supersedure.

AGE OF QUEEN

It is generally agreed that colonies with old queens swarm much more readily than those with young queens (Grout, 1963; Simpson, 1958 a; Allen, 1965). Simpson (1958 b) found swarming much less frequent for colonies with queens less than two-months-old than for those with one-year-old queens. He also found colonies with queens of the current year (which in England would be spring-reared queens) were much less prone to raise queens than colonies with queens of the previous year (Simpson, 1957 a). Simpson (1960 b) found that colonies with two-year-old queens swarmed more than colonies with one-year-old queens, the ratio being three to one. Allen (1965) reported reduced queen rearing among colonies with queens one-year-old, and no queen cells in colonies with queens of the current year.

OVERCROWDING

It is generally accepted that crowding of bees within the hive is conducive to swarming (Grout, 1963; Root, 1959; Simpson, 1958 a; Simpson and Riedel, 1963). When hive capacity is too small bees will crowd together at up to three times the normal density. In such conditions bees reduce activity to a minimum, and the temperature is maintained at the normal level of 35°C (Simpson and Riedel, 1963). However, colonies will not necessarily swarm even when severely overcrowded.

Butler (1958) describes how Simpson deliberately crowded 17 colonies and left 12 uncrowded. During three weeks none of the uncrowded colonies attempted to swarm, while eight of the crowded ones produced queen cells. Simpson (1957 b) found that colonies moderately overcrowded early in summer tended to rear queens, but did not necessarily swarm, while colonies severely overcrowded in mid-summer swarmed. Swarming, induced by drastic crowding of colonies, may bear a relationship to absconding or hunger swarms (Simpson and Riedel, 1963) and is not necessarily caused by the normal urge to reproduce. It is of particular interest that most overcrowded colonies did not prepare to swarm, so some other factor or factors must be involved even when colonies swarm from severe overcrowding. Since overcrowding through inadequate hive space should not occur in well managed apiaries these unknown factors are of the greatest importance to commercial beekeepers.

Demuth (1921, 1931) and Taranov (1947) consider that bees in colonies preparing to swarm deliberately crowd into certain parts of the hive. Simpson (1960 a) considers crowding may be caused by bees becoming inactive when preparing to swarm and so being forced to pack closer together to maintain normal colony temperature.

IMBALANCE OF AGE GROUPS

It is commonly held that a colony with an imbalanced population is most liable to swarm (Demuth, 1931; Winter, 1961; Grout, 1963). This view is supported by the work of Rosch (1925, 1927, 1930) who showed a division of labour among bees, based on age.

Gerstung (1926) postulated that bees of a certain age involuntarily produce brood food, and if insufficient worker brood is available to utilize this food, queen rearing commences, usually followed by swarming. However, Demuth (1931) stated that substitution of pupal brood for larval brood (a practice that should increase the availability of brood food) reduces the tendency of colonies to swarm. Demuth used this practice successfully as a method of swarm control. Simpson (1957 b) was unable to induce queen rearing in colonies deprived of all larval brood to create conditions where nurse bees would have no demand for their brood food. Conversely, when colonies were given an excess of larval brood, queen rearing was not necessarily inhibited. Later, Simpson (1957 b) concluded that a hive crowded with nurse bees, and with few larvae, would have a surplus of brood food which might slightly favour swarming if overcrowding also occurred. Apparently division of labour in a colony is not as rigid as formerly supposed, and involuntary production of brood food occurs only to a minor extent.

Demuth (1921, 1931), Taranov (1947), and Winter (1961), associated congestion in the brood nest with an excess of young bees. When Simpson (1957 b) crowded colonies with young bees he could find no evidence of crowding in the brood nest nor of swarm preparation.

Lindauer (1955) considered swarming bees to be idle foragers. Taranov (1947) claimed that increasing the proportion of bees to brood induced swarming. However, both these conditions would be expected in the autumn when swarming seldom occurs.

There appears to be no evidence that a preponderance of bees of any particular age will cause swarming, unless such an imbalance coincides with other factors such as lack of space.

PERFORMANCE OF QUEENS

The egg laying ability of a queen is reflected in the size of her colony. It is generally considered that large colonies swarm more readily than small colonies (Grout, 1963). Simpson (1958) reasons that because large colonies require more queen substance than small colonies they are more likely to swarm. According to Holzberlein (1952) it is unnecessary to look for swarm preparation in very small spring colonies. Gooderham (1948) stated that division of colonies early in the saeson practically eliminated swarming. Simpson (1956) showed that colonies at their strongest in May produced most swarms. Allen (1956) observed a tendency

for those colonies with large amounts of brood in May to produce queen cells. However, Murray and Jeffree (1955) failed to find any correlation between spring size of colonies and incidence of swarming.

It has been deduced that the queen of a colony preparing to swarm reduces egg laying, perhaps before queen rearing begins (Taranov and Ivanova, 1946; Allen, 1956). Most observers agree that this reduction in egg laying is caused by the queen being interfered with by swarm-conditioned workers, or being given less food by them. Thus it is a consequence rather than a cause of preparation. Allen (1956) recorded a reduction in the amount of food given to the queen about two weeks before eggs appeared in queen cells, but considered this could, perhaps, be more accurately considered a refusal on the part of the queen to receive food. However, Simpson (1958 b) suggests that the amount of food given to a queen may be governed by the quantity of queen substance she supplies, and deficiency of queen substance could cause both queen rearing and the reduced egg laying that precedes swarming.

Egg-laying ability of queens does not appear to be firmly linked with swarming propensities.

CONGESTION OF BROOD NEST

Several writers consider that the main cause of swarming is congestion of the brood nest (Grout, 1963; Hamilton, 1950; Cumming and Logan, 1950; Winter, 1961). Simpson and Riedel (1963) found that, provided ample space was available for adult bees, no swarming occurred when the brood nests of colonies were restricted to five combs.

DRONES

Some writers maintain that the rearing of drones indicates a hive's intention to swarm (Simmins, 1904; Root, 1959). Others consider the presence of drones encourages swarming (Herrod-Hempsall, 1938; Macfie, no date; Winter, 1961).

Allen (1965) found that colonies of bees with large numbers of drones showed no greater tendency to swarm than ones where drone rearing was restricted.

EXTENT

It is necessary to know to what extent swarming may occur in order to estimate the economic soundness of preventive measures. As pointed out by Simpson (1957 b) some hives that commence raising queen cells never swarm, so, in the absence of control measures, the more frequently colonies are examined and such cell raising noted the greater the impression gained of the amount of swarming liable to occur.

Simpson (1957 a) from a study of the records of honey producing colonies, concluded that 10% to 40% of bees would swarm in an average year if given sufficient hive space for their needs and otherwise left alone. Simpson (1960 b) found, among several hundred hives observed for three seasons, that colonies with two-year queens were far more prone to rear queens and swarm than those with one-year queens.

Allen (1965), in a study of 19 to 22 colonies over four years found that an average of 4% swarmed each year. However, the hives included some packages and were abnormally weak during one year of the observation period. Also, the colonies never produced an area of brood equivalent to four Langstroth frames (less than half the maximum brood area usually found in New Zealand).

The beekeeper is anxious to estimate the maximum amount of swarming likely to occur under the conditions met with in his district during a season. He can then decide what measures would be worthwhile to prevent loss from this cause. However, it is difficult to judge the average incidence of swarming in New Zealand.

CONTROL MEASURES

Simpson (1958 b) describes early methods of preventing swarming which consist mainly in giving colonies ample room. Clearly, swarm control depends on such measures, although it has been shown that some colonies will swarm even when their hive space exceeds requirements.

Manipulation of combs and brood to ensure the queen has ample room in which to lay has found much favour as a swarm control measure, but Simpson and

Riedel (1963) failed to make colonies swarm even when the size of the brood nest was severely restricted. Methods involving division of the brood nest into clearly separated parts have found favour from time to time. Our present knowledge of the role played by queen substance in colony behaviour indicates that such methods probably operate by reducing the number of bees with the queen, and so increasing the amount of queen substance available per bee sufficiently to inhibit queen rearing and confine queen cell building to that part of the brood nest separated from the queen. Cells built there can be conveniently destroyed by the beekeeper or used for raising new queens. The timing of inspection in such swarm control methods is difficult because seasonal conditions vary.

Knowledge of the system within the colony whereby bees of a particular age perform certain duties has resulted in measures being taken by beekeepers to ensure that no group of bees is idle. Nurse bees are given sufficient brood to feed, wax workers sufficient comb to build, and idle foragers are removed by changing the position of hives so that their field bees fly back to other hives. However, no clear evidence is available for estimating the effectiveness of these methods.

A swarm cannot leave a hive in which the queen's wings have been clipped until a virgin queen has hatched, usually giving the beekeeper extra time to take corrective measures. Clipping is therefore a worthwhile method of control.

Considerable doubt is thrown on the efficacy of queen cell removal as a means of swarm prevention. The presence of swarm cells may indicate the failure of measures applied previously to prevent swarm preparation. Unless these cells are destroyed the colony is likely to swarm. If queens are clipped, and queen cells removed at suitable intervals, colonies cannot swarm. However, frequent examination of colonies is not always practicable.

It is generally accepted that colonies with young queens seldom swarm. The most effective method of swarm control depends on the regular replacement of old queens.

REFERENCES

ADAM, Brother 1951: In search of the best strains of bees. **Bee World 32:** 57-62.
ALLEN, Delie M. 1955: Observations on honey bees attending their queen. **Brit. J. anim. Behav. 3:** 66-69.
———— 1956: The behaviour of honeybees preparing to swarm. **Brit. J. anim. Behav. 4:** 14-22.
———— 1965: The production of queen cups and queen cells in relation to the general development of honeybee colonies, and its connection with swarming and supersedure. **J. apic. Res. 4:** 121-141.
BUTLER, C. G. 1958: Queen supersedure and swarming. Pub. by Central Assocn. Bee-keepers, Essex, Gt. Brit.
———— 1959: Queen substance. **Bee World 40:** 269-275.
CUMMING, A. R.; LOGAN, M. 1950: Beekeeping craft and hobby. Oliver and Boyd, Edinburgh, Gt. Brit.
DEMUTH, G. S. 1921: Swarm control. Frmrs' Bull. U.S. Dep. Agric., No. 1198, 1-28.
———— 1931: The cause of swarming is known. **Amer. Bee J. 71:** 419.
FORSTER, I. W. 1961: Unpub. rept. N.Z. Dept. Ag.
GERSTUNG, F. 1926: Der Bien und Seine Zucht. 7 edns. Berlin: Pfenningstorff.
GOODERHAM, C. B. 1948: Rep. Minist. Agric. Can., 117-118.
GROUT, Roy A. 1963: The hive and the honey bee. Dadant and Sons, Hamilton, Illinois, U.S. pp. 556.
HAMILTON, W. 1950: The art of beekeeping. Herald Printing Works, York, Gt. Britain.
HERROD-HEMPSALL, W. 1938: The beekeeper's guide. Brit. Bee J., London, Gt. Brit.
HOLZERBEIN, J. W. 1952: Swarm prevention — not swarm control. **Amer. Bee J. 92:** 195-196.
KUMKO, V. 1963: Complete texts of lectures of nineteenth congress of Apimondia in Prague p. 379. Edited by MZLVH Prague. pp. 384.
LINDAUER, M. 1955: Schwarmbienen auf Wohnungsuche. **Z. vergl. Physiol., 36:** 263-324.
MACFIE, D. T. (no date): Practical beekeeping and honey production. Collingridge Ltd., London, Gt. Brit. pp. 124.
MURRAY, L.; JEFFREE, E. P. 1955: Swarming in Scotland. **Scot. Beekeep. 31.** 96-98.
ROOT, A. I. 1959: The ABC and XYZ of bee culture. A.I. Root Co., Medina, U.S. 703 pp.
ROSCH, G. A. 1925: **Z. vergl. Physiol. 2:** 571-631.
———— 1927: **Biol. Zbl. 47:** 113-121.
———— 1930: **Z. vergl. Physiol. 12:** 1-71.
SIMMINS, S. 1904: A modern bee farm p. 41. Woodford Fawcett Co., London, Gt. Brit. pp. 405.
SIMPSON, J. 1956: The behaviour and physiology of the honeybee, with particular reference to swarming. Ph.D. thesis, University of London.
———— 1957a: The incidence of swarming among colonies of honeybees in England. **J. agric. Sci. 49:** 387-393.
———— 1957b: Observations on colonies of honey-bees subjected to treatments designed to induce swarming. **Proc. R. ent. Soc. Lond. 32:** 185-192.
———— 1958a: The problem of swarming in beekeeping practice. **Bee World 39:** 193-202.
———— 1958b: The factors which cause colonies of **Apis mellifera** to swarm. **Insectes sociaux 5:** 77-95.
———— 1959: Variation in the incidence of swarming among colonies of **Apis mellifera** throughout the summer. **Insectes sociaux 6:** 85-99.
———— 1960a: Problems of swarming behaviour. Pub. by Central Assocn. Bee-kepers, Essex, Gt. Brit.
———— 1960b: The age of queen honeybees and the tendency of their colonies to swarm. **J. agric. Sci. 54:** 195.
———— 1962: Work at Rothamsted on honeybee swarming. **Rep. Rothamst. exp. Sta.** 254-259.
SIMPSON, J.; RIEDEL, I. B. M. 1963: The factor that causes swarming by honeybee colonies in small hives. **J. apic. Res. 2:** 50-54.
TARANOV, G. F.; IVANOVA, L. V. 1946: Observations upon queen behaviour in bee colonies. **Pchelovodstvo 2-3:** 35-39.
TARANOV, G. F. 1947: The genesis and development of the swarming cycle. **Pchelovodstvo 2:** 44-54.
WINTER, T. S. 1961: Beekeeping in New Zealand. **Dept. Ag. Bull. 267,** Blundell Bros., Wellington, New Zealand, 172 pp.

H.M.A. ELECTION RESULTS

The result of the election of two Producer representatives to the Authority was as follows:-

Valid votes cast for each candidate:-

BARBER James Richards	1148
CLOAKE Harry	1608
POOLE Russell Frederick	1336
WARD Dudley Lawrence	838

I therefore declare the said HARRY CLOAKE and RUSSELL FREDERICK POOLE duly elected.

(Signed) K. E. MOODY
Returning Officer.

CAN ANYTHING BE DONE TO REDUCE QUEEN LOSSES AFTER CAGING?

By R. S. Walsh, Apiculturist, Auckland.

During the season 1967-68 tests were carried out with various queen cage candy formulas with the object of ascertaining which was the most suitable beefood and which mixture would remain stable for a reasonable period under various climatic conditions. Queens were caged with and without attendants, the intention being to discover just how essential to queens attendants were.

Some of the cages were supplied with phials of water as it was thought water may be of some significance. These tests were first carried out in a honey house where temperature and humidity control was impossible. The queens used were beekeepers' rejects of uncertain age received over a period of three months. It was not known for how long the queens and bees had been confined to their cages before despatch to Auckland.

A further trial was carried out this summer under more controlled conditions. Queens similar to those used last season were kept in thermostatically controlled heated cabinets and humidity was regulated with saturated salt solutions. The results are summarised in the detailed table.

Queen Cage Candies

The various candies used in the trials contained the following ingredients:

Honey and Piping Sugar (Starch free icing sugar)
Boiled Honey and Piping Sugar
Invert Sugar and Piping Sugar
Glucose and Piping Sugar (Fondant)
Glucose, Piping Sugar and Pollen
Invert Sugar, Piping Sugar and Pollen
Liquid Sugar and Piping Sugar.

Of the above formulas only the glucose fondant and the liquid sugar mixture were entirely unsuitable. The fondant stood up to humidity better than any of the other candies but unfortunately glucose will not sustain bees. The invert sugar candy appeared to be the most likely to remain stable in all climates and it was every bit as good a bee food as honey candies. The formula used in the trials was that of Mr Frank White, the queen breeder.

25 lb sugar
1 gallon water
½ oz tataric acid

The ingredients are mixed, boiled slowly for half to three quarters of an hour and well stirred.

When preparing the candy the proportions are two pounds of this invert sugar mixed with five pounds of piping sugar. Kneading should take at least half an hour. Ordinary icing sugar has a small percentage of cornflour added to enable it to run freely. Icing sugar should not be used in candy if it can be avoided. Queens cannot survive a long confinement on icing sugar candy.

Some of the candies under test in the honey house trial proved quite unsuitable in the almost continuous high humidity of this district. On the other hand if the various candies could be made dry enough to stand up to this climate they

would lack sufficient moisture for the queens' requirements if transported to an area of low relative humidity.

Candy to which pollen was added absorbed moisture very rapidly and daubed the bees in a very short time. The pollen used had been dried in a solar melter and was extremely hard, taking considerable crushing before it could be incorporated with the candy.

Water an Advantage

When water was supplied to the bees by standing small phials on the cage mesh the life of the bees in most cases increases very considerably, an example of this being a life increase from ten to thirty-four days at 72°F to 80°F, whilst those without water lived four to seventeen days.

The higher the temperature above certain limits the shorter the life of caged bees appears to be, but when supplied with water, temperatures in excess of 90°F do not seem to trouble them. If the humidity is very low as well the life of both bees and queens is curtailed and even when they have access to water they are affected to some extent.

It was found that all candies including pollen candy firmed considerably in the heated cabinet experiment when temperatures were high and relative humidity was below 20 per cent. The queens and escorts were unable to sustain life when candy reached this state but those supplied with water survived longer. It took about fourteen days for the candy to become hard but the bees and queens died before this stage was reached.

The trial was not primarily intended to test the longevity of queens as it was considered more practical to test the various candies and the queens' ability to survive under a range of temperatures and relative humidity. Eighteen days was considered a period of confinement seldom exceeded under normal commercial procedures so this was the upper limit used. Some of the queens that survived the tests were later introduced into hives.

Caging Queens Without Escorts

This experiment was confined to the honey house section of the trial, the queens being kept on a bench and supplied with small water phials with punctured lids resting on the wire covering the cages. There were a few unaccountable early deaths and two queens were drowned through faulty caps on the water phials. Thirty queens were used and the candy supplied was limited to invert sugar and piping sugar. Excluding the six queens that died in the first week the average days of survival for the remaining twenty-four queens was seventeen days. Individual queens lived 50, 47, 36, 30 and 17 days.

The survival rate compared very favourably with queens caged with attendants.

Conclusions

Queen cage candy alone does not appear to be entirely suitable as a food for queens in the average range of temperature and relative humidity normally expected, but if water was available with the candy diet the life span of queens and escorts could be very greatly increased.

The evidence in these trials suggests that it could be an advantage to introduce queens to colonies in cages without escorts if the candy is not too firm but rather less dry than usual without being wet.

It is even possible that queens alone in cages could be mailed if their confinement did not exceed a few days. If however some means of supplying them with water could be found there should be little risk in mailing unattended queens within New Zealand.

As matters stand at present it is recommended that caged bees be provided with water before despatch and that they are again given water when they reach their destination. A good smoking before caging ensures they will fill up with honey. If queens must be held over before mailing or introducing to colonies they should be kept warm and dry and if possible temperatures should not exceed 90°F and humidity should be less than 60 per cent. Candy made from invert sugar and piping sugar is recommended as the best food at present available for queen bees confined to mailing or introduction cages. It should be prepared at least some days before it is actually required and kept in an airtight container.

Table showing survival rate of queens under controlled conditions of temperature and relative humidity with the various candies used.

No. of queens	Days confined	Type of Candy used	No. of queens surviving full period	Average No. of days survived by others	Temperature	Percent Relative Humidity
6	18	Boiled honey and piping sugar	Nil	9	75°F	23–28
5	18	,, ,, ,, ,, ,, + water	4	10		
6	18	Invert sugar and piping sugar	2	11		
6	18	,, ,, ,, ,, ,, + water	6	—		
5	18	Honey and piping sugar	2	10		
4	18	,, ,, ,, ,, + water	4	—		
6	18	Invert candy and pollen	3	9		
5	18	,, ,, ,, ,, + water	4	17		
4	18	Glucose fondant	Nil	6		
4	18	Liquid sugar and piping sugar	Nil	8		
3	15	Boiled honey and piping sugar	2	11	80°F	55
3	15	,, ,, ,, ,, ,, + water	3	—		
4	7	Invert sugar and piping sugar	4	—		
2	7	,, ,, ,, ,, ,, + water	2	—		
2	18	Honey and piping sugar	1	11		
2	18	,, ,, ,, ,, + water	2	—		
2	12	Invert candy and pollen	1	9		
3	12	,, ,, ,, ,, + water	3	—		
4	10	Glucose fondant	Nil	5		
2	10	Liquid sugar and piping sugar	Nil	6		
5	18	Boiled honey and piping sugar	3	10	90°F	50
5	18	,, ,, ,, ,, ,, + water	4	12		
2	14	Invert sugar and piping sugar	1	11		
2	14	,, ,, ,, ,, ,, + water	2	—		
2	12	Honey and piping sugar	1	8		
2	12	,, ,, ,, ,, + water	1	9		
2	12	Invert candy and pollen	1	11		
2	12	,, ,, ,, ,, + water	2	—		
2	12	Glucose fondant	Nil	4		
2	12	Liquid sugar and piping sugar	Nil	6		

The 18 day period is close to the maximum period that worker bees can survive in cages. They must fly to defecate so this no doubt accounts for their shorter life in confinement.

NATIONAL EXECUTIVE
Three Day Meeting

Executive met for three days in Wellington on September 30 through October 2 and handled a heavy programme of industry business. In the Chair was the President of the National Beekeepers' Association and in attendance Messrs. G. Winslade, F. Bartrum, B. Forsyth, T. Gavin, I. Dickinson, K. E. Moody and L. W. Goss.

HONEY HOUSES. General discussion took place on standards of cleanliness in honey houses and as reported elsewhere in this issue, the Chief Inspector of Food Premises from the Health Department outlined the basic requirements which would be expected when supervision of honey houses passed from the Department of Agriculture to the Health Department. Inspectors are provided with standard forms for all premises where food is handled and 22 items detailed for attention. For honey houses, an additional 3 items will probably be included covering the cleaning and storage of containers for packing, the condition of fixed appliances and adequate steps to ensure exclusion of bees entering the house unnecessarily. Specimen forms were made available to Executive and an assurance given that every co-operation would be given to the industry to consider the proposed Regulations in full. Publicity will be given in the journal to enable every beekeeper to improve his standards where required.

HONEY MEAD. Support is to be given to a potential manufacturer to sell this product, and enquiries made to ascertain changes which may be necessary in existing legislation.

INDUSTRY FUND. Following the Resolution passed at the 1969 Conference at Invercargill, consideration in detail was given to raising funds to finance the industry and alternatives to the existing Seals Levy. At the request of the Packers' Association, Mr Lloyd Holt and Mr Jasper Bray were received to place before Executive their assurance that their organisation was anxious to co-operate and implement a satisfactory alternative scheme to ensure that all producers of honey made contribution to the fund, expressing the view that a large tonnage of honey was sold within New Zealand other than through recognised trade channnels on which no levy was made.

Mr Bray sugested that a scheme based on hive holding would overcome the problem if made by Statutory Declaration, and Mr Holt was of the opinion that a levy on production would provide the required funds on an equitable basis from the whole industry. Messrs Bray and Holt were thanked for their assistance and presentation of views.

After lengthy discussion it was resolved that the Seals Levy be continued but that the levy be paid on all honey sold within New Zealand, collection to be as set out in Section 21 of the HMA Regulations. A Statutory Declaration would be required for all sales of honey other than in containers already bearing a seal, and the matter is to be discussed with the HMA by the President and Secretary.

TAX INCENTIVES. Implementation of this Remit has not been possible because of the failure to obtain information from a producer. The required information will continue to be sought and representations made to the Department of Inland Revenue relevant to a tax incentive for honey packed in retail containers for export.

HMA ELECTIONS. In his capacity as Returning Officer, the Secretary reported on certain procedural anomalies which would be referred to the HMA for consideration, and the subject was placed on the agenda for the next meeting of Executive. Concern was expressed that an interest rate of 5½% should be charged to the HMA for additional finance required to purchase the two South Island plants, and that suggestions advanced by the Packers' Association in influencing the decision were not valid. Other primary industries receive financial assistance at an interest rate of 1% and it was resolved that the matter be brought to the attention of the Hon. Mr Talboys on the following basis.

(a) The Producer finances the packer

(b) Other primary industries pay 1%

(c) The arguments advanced by the Packers' Association are erroneous.

(d) The matter had not been referred to the NBA which is the accepted and recognised mouthpiece of the industry as a whole.

NOMINATION QUALIFICATION. It was considered that the Authority would be strengthened by inclusion of persons with commercial ability who were not necessarily commercial beekeepers, and that a census be taken as to whether the HMA Regulations should be amended to permit nomination of a person as a Producers' Representative with less than 30 hives.

HMA VOTING QUALIFICATIONS. The reply received from Mr D. J. Carter, Under Secretary to the Minister of Agriculture was considered unsatisfactory and not acceptable to the Association, neither did it appear to be in line with industry opinion, and it was noted that the comb honey producer is still debarred from voting in the elections. A copy of the letter to Mr Carter would also be sent to the Prime Minister.

NATIONAL PARK. The Board is to be informed that tendering for sites is considered to be unfair to small beekeepers and that a system of balloting should be introduced. The importance of the pollination service rendered by the industry should be borne in mind.

SUGAR. A survey is to be carried out to decide how much sugar would be required for the industry and the estimated quantity of honey which would be released for sale. In the light of such information, representations may be made to Industries and Commerce and the Customs Department on the feasability of importing sugar for bee-feed duty free. A factor which would be of importance would be the necessity to test sugar for contamination by insecticides, for which Mr Palmer Jones of Wallaceville may be able to be of assistance. Distribution would have to be arranged with a central body such as the Association or the HMA.

HOPKINS' BEQUEST. The Director of the Cawthron Institute at Nelson had indicated that sufficient funds had been accumulated for further research to support an officer with a Ph.D. for 12 - 18 months. A suitable line of enquiry is to be suggested to benefit the industry.

QUEEN BREEDING. During the North Island Seminar at Hamilton, a Queen Breeding Association had been formed by interested parties. Concern was expressed that if too much emphasis is placed on the export of queens, insufficient may be available for New Zealand needs. It appeared from results published overseas that the superiority of New Zealand queens had lessened the previous enthusiasm to import queens for stock improvement purposes.

N. ISLAND SEMINAR. One hundred and eleven beekeepers attended the Seminar, and Mr Bruce Forsyth and his committee were complimented on their work in ensuring the Seminar's undoubted success.

APIARIES BILL. It was noted that of six points raised by Executive, five had been accepted by the Committee as amendments to the Bill. Having received its second reading, it was now expected that the Bill would be operative as from April of 1970. A copy of the legislation will probably be published in the May issue of the journal.

INSURANCES. An article will be prepared to explain in detail the difference between the Members' Comprehensive Insurance and the Public Liability Cover.

REPRESENTATIONS. Waikato Branch brought to the attention of Executive the growing and undesirable practice of representations being made other than through the Association. Executive emphasised again the desirability of unified action and urged all members to act within the framework of their recognised organisation.

GRASS VERGES. The National Roads Board have been requested to consider the planting of nectar secreting and pollen bearing plants and shrubs in rest areas, and clover on roadside verges.

EDUCATION. Consideration was given to the proposed Cadetship Scheme, and resolved that a sub-committee be formed to prepare a syllabus and basic conditions of operation related to the Diploma of Apiculture. Approval would be sought for Mr V. Cook of the Department of Agriculture to be a member, together with Mr I. Dickinson and Mr J. Heineman.

CONFERENCE 1970. Arrangements will be made for Conference in Auckland to be held on Wednesday, Thursday and Friday, July 8, 9 & 10, and the opportunity taken to visit the HMA plant in Parnell.

DEPARTMENTAL. Messrs Greig and Smaellie attended Executive on the Thursday morning to discuss subjects of mutual interest, and their presence was appreciated. Executive also expressed their thanks to Mr V. Cook of Oamaru for the publicity he obtained for the industry on local broadcasting programmes.

INTEREST PAYMENTS. Concern was expressed at the fact that the producer was not paid for his product until actually sold by the packer, often having to wait for six months or more, thereby incurring charges for bank overdrafts. Enquiry is to be made with the HMA and the Packers' Association as to how the problem may be overcome.

NEXT MEETING. Subject to arrangements with the HMA, the next meeting in Wellington will be from March 17-19, 1971.

TEST FEEDING OF INDUSTRIAL SUGAR ON RANGITOTO ISLAND, AUCKLAND, and at OAMARU, OTAGO

By R. S. Walsh, Apiculturist

Department of Agriculture, Auckland

35 hives were fed 140 lbs of industrial sugar to which 10 gallons of water were added to form a syrup. This was on 2 July 1969. Other hives were fed filtered icing sugar syrup and 16 hives remained on frames of honey. These hives were a little stronger than the others being wintered on Rewarewa honey which is much superior to the usual Pohutukawa honey stores. No attempt was made to ascertain the measurement of brood in any of the hives as only a few hives had any brood amounting to a few square inches only. All hives were given ½ lb of pollen supplement. Within a three-day period, the queens in the hives fed the industrial sugar commenced to lay and soon outstripped those on icing sugar solution. The hives confined to honey stores showed no change.

Hives were not fed again until August 2, when the same 35 hives received industrial sugar syrup, plus a further supply of pollen supplement as they had consumed that given to them the previous month. 11 hives were given icing sugar syrup as before, plus pollen supplement. Since the earlier visit, the hives fed with industrial sugar progressed markedly. Even the weakest hives possessed three and four frames of bees and around 72 sq. inches of brood. The best hives had two well-filled supers of bees and three or four good frames of brood.

Colonies on icing sugar syrup had progressed, but to a lesser degree.

Hives with winter stores only had patches of brood, and were beginning to bring in pollen.

The next visit was on September 3 when more syrup, made up of both industrial and icing sugar was fed to the hives. Considerable pollen had been stored, something that had not occurred in previous seasons.

A noticeable honey flow was now taking place which was another surprise, as no such flow had occurred at this time in previous seasons. Hives were well advanced and prosperous. The honey flow had resulted in an evening of all hives and it was difficult to differentiate between the stronger hives whether fed on industrial sugar, icing sugar or honey. This unexpected honey flow, which filled the brood chambers with a water-white scented honey, virtually ended the trial.

However, it had been proved that hives can survive and thrive on industrial sugar and I would have no hesitation in recommending its use in the North Island.

Mr V. Cook reports that five hives in the Oamaru district were deprived of their honey stores and each fed 28 lbs of industrial sugar dissolved in 14 pints of water on June 30 1969.

The results showed that they wintered very satisfactorily despite the rigorous treatment they underwent, including being fed in mid-winter when frosts were frequent and severe. At the present time (15.9.69) the hives have an average of 2.6 combs of brood, 1.1 combs of stores and 8 combs of bees; potentially they are ideal honey production units.

Following the report detailed above under New Zealand conditions, it is interesting to note the information published in APIACTA of experimental feeding of colonies with sugar in the USSR, summarized in 1965.

313/69 SHUSHKOV, D.G., Kemerovo Agric. Exp. Station, Kemerovo, U.S.S.R. Pchlovodstvo 85 (12); 8-9 (1965)

Sugar and the Productivity of Honeybees

Experiments were made with 45 equalized colonies, to compare the effects of winter stores on colonies (wintered in cellars, as is normal) in the forest regions of Kemerovsk province. Some colonies were left with all honey, some with honey and sugar, and some with sugar stores only, the honey having been extracted.

After the 1960/61 winter the colonies did equally well, the 1961 summer being a good one. But after the 1961/62 winter, differences became apparent during the poor weather in 1962, and some of the colonies were moved to the taiga, where there were good flows from clover, raspberry, etc. The final conclusion from the tabulated results is that if there is a spring and early summer nectar flow, partial substitution of sugar for honey for wintering is not disadvantageous (and reduces loss of bees if the honey is from honeydew), but that in the absence of early flows the substitution of sugar reduces the colony yields so much that their maintenance is uneconomic.

APIARY INVESTIGATIONS AND FIELD WORK

(Reported by the Superintendent, Beekeeping prior to 1969 Conference)

WASP ATTRACTANTS

This work has involved testing various chemicals found in the United States to be successful specific attractants for the vespual type wasp, and has been undertaken in the Taranaki, Manawatu, Hawkes Bay regions and will continue for several seasons.

EVALUATION OF DIFFERENT COLONY MANAGEMENT METHODS

South Canterbury, Taranaki, Manawatu, Hawkes Bay and Auckland districts are being used. It is hoped that this work will indicate methods of management which will result in increased honey yields.

POLLEN TRAPPING AND POLLEN SUPPLEMENTS

Pollen is being trapped during periods of abundance, stored, mixed with other protein rich supplements and fed to colonies during periods of dirth. Colonies treated in this way will be compared with colonies that did not receive supplementary pollen feed.

SUNFLOWER POLLINATION

Acreage of sunflower grown for seed production in the Hawkes Bay, and Manawatu regions is increasing. Larger acreages are anticipated next year. Investigations will be undertaken regarding the necessity of honey bee colonies for effective pollination.

WINTERING BEES ON INDUSTRIAL RAW SUGAR

This subject is being undertaken to determine whether honey bees can survive the winter when they are fed only industrial raw sugar.

FACTORS CONTRIBUTING TO BEE MORTALITY

For a number of years various means have been tried to retain hive numbers at critical periods on Rangitoto Island. These have not been successful and a detailed study of the problems, with a view to providing a solution for the economic keeping of bees is being undertaken this season.

A CAPPING SMELTER ON A NEW PRINCIPLE

Work is proceeding at Auckland with a view to develop a capping smelter that will not darken honey but will separate the melted wax and honey at low cost in a low cost smelter. A prototype will be built and tests will be carried out in conjunction with the DSIR.

Other work includes: testing sugar concentration of nectar in numerous plants; fumigation of section comb honey; development of an improved Queen cage candy and despatching Queens in cages without escorts.

Letters to the Editor

Hadlow, No. 4 R.D.,
Timaru.
22nd Sept. 1969.

re CONFERENCE REMITS

Sir,

The Executive of the N.B.A. has already held one meeting since Conference, and by the time this letter is printed, will have held a second meeting.

From reports of the first meeting little else was done except implement the new increased membership fees. Apparently nothing was done about the replacement of the Seals Levy by an Industry Fund, although to most attending Conference these two matters were closely linked. Voting was practically unanimous that action be taken.

I would suggest that if the Executive of the N.B.A. do not take more positive action to implement the wishes of Conference, Association membership will fall.

This is a protest at the N.B.A. Executive's lack of action to establish an Industry Fund, controlled by the National Beekeepers Association, to replace the Seals Levy which is now paid only by a small section of our industry, and that the lack of initiative apparent will lead to an industry of "Back Door Sales", as against the ideal organised market of wholesaler to retailer and to consumer.

R. Davidson.

Footnote: Mr Davidson must surely realise that the meeting of the new Executive immediately after Conference took place at a late hour when everyone was extremely tired and incapable of giving proper attention to such an important question as the Industry Fund wanted by all shades of opinion. The meeting of Executive spent hours on this same problem at their October meeting, and it was very evident that the two delegates from the Packers' organisation had parallel thoughts on the subject.

★ ★ ★

Auckland,
24 Sept. 1969

EXAGGERATED HONEY CLAIMS

Sir,

Recently when looking in a health food shop window, I noticed a display of honey. A large card near the honey claimed that:- 1 lb of honey contains 1,500 calories which is equal to 6 pints of milk. 14 ozs of honey has the same food value as 20 eggs. A man who was standing near me, said he was a dietition, and went on to say that the claims for honey on the card were not true.

I decided to check up, and wrote to the New Zealand Family Doctor magazine, who have a panel of doctors and other specialists to supply answers to questions asked by readers. In the September 1969 issue, appeared the following answer: "Honey and meat (sirloin) have approximately the same calorie value — 294 calories per 100 grams for honey, and 271 for beef. 1 lb of honey yields 1411 calories, and six pints of milk yield 2340. The basic nutrients in 100 grams of honey are:- Protein 0.3, fat nil, and carbohydrate 79, compared with protein 12.8, fat 11.5, and carbohydrate 0.7 in eggs."

Exaggerated statements about the food and curative value of honey, can make beekeepers a target for ridicule and contempt. I believe that a lot of harm is done to the honey industry, when claims are made for honey that cannot be proved. People who made exaggerated statements to the public about honey are doing beekeepers a real injury.

G. N. Lansdown.

★ ★ ★

Pleasant Point,
Canterbury.
Oct. 3, 1969

Sir,

Because of agitation by the Packers' Association to the Government, finance for South Island depots of the HMA will cost you, the beekeeper, a great deal of money. The increase from 1% to 5½% on interest will mean a reduction in payout by the HMA. As the HMA price governs the price that packers will pay to producers, they will no doubt reduce their payout to the absolute minimum. This will mean a reduction to all producers of honey, with an increase in revenue to packers and result in an undesirable trend since packing will undoubtedly be the most lucrative operation in the industry, and will cause many beekeepers to pack for an already over-supplied home market.

The story put up to the Minister by the Packers was that the financing of South Island depots on a basis of loan money at 1% was unfair competition. What he was not apparently told was that it is the producer who finances the operations of packers completely interest free, receiving only progress payments as honey is sold. If this is indicative of the shoddy treatment producers are to receive from the Packers Association, producers should charge 6% on all money owing immediately the honey is extracted, plus insurance and a storage fee on all honey not taken for immediate delivery.

Packers who only buy honey in years of short supply should charge an extra 1c a lb on the ruling rate.

F. A. Bartrum.

Kyeburn,
Central Otago,
21.10.69.

Sir,

Through your columns I would like to thank the Producers who voted for me at the recent Honey Marketing Authority election.

R. F. Poole.

★ ★ ★

Fairview,
Timaru.
19.10.69

Sir,

I extend my sincere thanks to all those who supported me in the recent Honey Marketing Authority election. I shall continue to support the interests of the producers.

Harry Cloake.

★ ★ ★

Pio Pio,
22.10.69

Sir,

My thanks to those who voted for me in the recent Honey Marketing Elections. My circular was not designed to secure votes, but has caused interest and discussion, and some concern in Government circles. I have therefore written a commentary on the Minister's address, and asked the Editor to publish it.

I thank all the Electors for the nine years they have elected me to the Authority. I believe the running of the Authority was much improved during that period, and that the efforts of those elected went much more to the consideration of practical problems, rather than to dissensions, and I hope this spirit will continue.

J. R. Barber.

HONEY MARKETING AUTHORITY

Producers may have read reports of remarks made by an Opposition Member, Mr B. P. MacDonell, during the debate on the Amendment to the Apiaries Act.

Mr MacDonell suggested that the identity of New Zealand Honeys was lost in the United Kingdom, and that our selling arrangements were in need of an overhaul.

Mr Carter, Parliamentry Under-Secretary to the Minister of Agriculture, pointed out that the recent Honey Marketing Authority Election results tended to show that the Agency Agreement with Kimpton's had the industry's support, and I must, in fairness to the Authority and its Agents, set the record and Mr MacDonell straight.

The identity of New Zealand honey in the United Kingdom is not lost. Ten leading honey packing firms pack and sell New Zealand honey under a New Zealand label.

Returning travellers from this country sometimes report that they have been unable to find New Zealand honey in shops in the United Kingdom. The quantities available for export in recent years to a country with a population of 50 million makes this situation likely.

We know of no packer using New Zealand honey to blend with darker honeys from other countries, and there would be no commercial sense in so doing.

For example, Argentine honey is a very white honey, and therefore, New Zealand honey could not be used solely to supplement darker honey from the Argentine, when that honey is as white as any. As a matter of fact, it is this cheap white honey from the Argentine which is used by some packers to bring up the colour of their blends of honey from other countries, which are generally darker in colour.

It would not be a commercial proposition to use high-priced New Zealand honey for this purpose, as Mr MacDonell mistakenly suggested.

We should all be aware, — and proud — of the position which New Zealand honey enjoys on the United Kingdom market, and a good deal of work has been put into encouraging the trade to pack and sell New Zealand honeys as specialist individual honeys of the highest quality. This work over the last fourteen years has brought its rewards, so that not only is New Zealand White Clover readily marketable, but "Imperial Bee" blend, mixed flowers, and we have lately added the named floral sources as straight line precialities.

J. W. Fraser,
Chairman,
NEW ZEALAND HONEY MARKETING AUTHORITY

COMMENTARY from the Editor's Desk and Mail

AN ENTIRELY NEW BOOK has been published which will be of interest to the specialist requiring technical data on beekeeping equipment or who proposes to apply for patent rights on equipment to be used in beekeeping or associated activities. Titled "BEE AND HONEY PATENTS OF THE WORLD" by Oliver S. North, 812S Ode Street, Arlington, Virginia 22204, USA, the book covers most patents concerned with beekeeping, honey processing and packing, honey beverages and beverage powders, honey butters and spreads, other honey foods, and bee and honey health products and medicines. The complete patent is given for each of the 125 listed. The section dealing with beekeeping proper is only 39 pages, so the book will obviously have most practical appeal to beekeepers concerned with aspects of honey and admixing with other foods, or with honey health products. The author is to be congratulated in assembling so much information that would not otherwise be available but the fact remains that the work is for the specialist and not the average beekeeper. No patent from New Zealand is listed.

For those with an inventive turn of mind or who are thinking of applying an idea thought to be new, a great deal of work and research can be saved by purchasing a copy from the publisher Oliver S. North, 812 South Ode Street, Arlington, Virgina 22204, U.S.A. Price $15.00 post paid.

★ ★ ★

THE AUCKLAND BEE CLUB (the Friendly Club) an organisation of amateur beekeepers in the province with headquarters in the city, held a well attended meeting at the Department of Agriculture last August. Apiculturist Bob Walsh and apiary instructor Neil Bates gave practical advice to the seventy members present, and an interesting film specially obtained by Kevin Ecroyd from Australia on Dar-es-Salaam beeswax was shown in colour. Extraordinary how these simple folk gather their wax and clean it by crude methods to such a high degree of perfection that it obtains the highest prices on world markets. When the number of local traders are seen through whom the product passes, some sympathy must be expressed for the net amount received by the producers.

★ ★ ★

INSURANCE. The British Beekeepers' Association has a scheme which covers loss through theft, accidental or malicious damage, fire, flood and third party, for which the annual premium is 12s 6d. a fee of 1/- charged in the subscription to the Devon Beekeepers' Association provides cover against bee diseases resulting in loss, and a total of 5s 0d provides cover up to £18. 0. 0.

APICULTURE, published by the West Australian Department of Agriculture, has a note headed: APICULTURAL SLUMS and makes the following scathing comment. "The condition into which a few apiarists permit their hives to descend is a credit neither to themselves nor to the industry. The sight of some of these apiaries is enough to put the beholder off eating honey for life. Such apiaries may be seen by forest workers and by motorists who are enjoying the country-side over the weekend. Some of the offensive apiaries are sited even in full view of the road. It is high time that those apiarists made a drastic improvement in this matter."

Australia is not alone in this problem. If your face is red or your conscience pricks, get moving and do something about it. If you don't, the Health Department soon will.

★ ★ ★

THE FIRST PROSECUTION of its kind has taken place in the United Kingdom under the new Trade Descriptions Act, designed to prevent the public from being misled as to actual contents of food containers offered for sale. In the case in point, a well known beekeeper of respected integrity for many years, was prosecuted for selling honey not of a nature, substance and quality demanded by the sanitary inspector and selling honey in such a manner that the label was calculated to mislead the consumer. Apparently the prosecution hinged on whether the honey was of a given floral source or not, judged on a pollen count but the prosecution failed on a technicality.

★ ★ ★

SEALING WAX is not often used these days, but it can be useful for the odd occasion and sealing Registered letters and packets in particular. Postal authorities are justifiably fussy that all knot ends are adequately sealed, and with the raw materials at our finger tips, the youngsters may enjoy making up sets for practical use and for exhibition at school on parent's day or field days. BRITISH BEE JOURNAL published the following recipe:

1 lb. resin, 1oz. beeswax, and 4oz. of finely-ground ivory black. Melt the resin and wax over a low heat protected by a water jacket. Stir in the ivory black slowly and when thoroughly mixed pour into moulds to cool.

For other colours use the same amount of resin and wax but mix in 6oz. brown ochre; for green, 4oz. of verdigras; for blue, enough ultramarine until the colour required is obtained; for red, 4oz. Venetian red. If you are clever enough to make a suitable mould from which the sticks can be removed, it might be an idea to insert a piece of cotton string through the centre to serve as a wick, similar to a candle. It certainly saves dousing the match when the wax melts and a molten blob falling on the end of the fingers. Surprising how hot it feels to sensitive nerve endings.

★ ★ ★

BREEDING STOCK. "Two points must be remembered. First, queens and drones cannot pass on qualities which do not exist in their hereditary make-up and, second, the process of selection must continue always." "Apiculture" Western Australia 1966.

★ ★ ★

Dr B. J. Donavan, a 28 year old scientist from the University of California, has arrived back in New Zealand to join the staff of the DSIR at Lincoln where his work will primarily be directed to the study of pollination of lucerne and the possibility of introducing other strains of bees to carry out this work. The objection by the honey bee to working lucerne flower is well known, and Dr Donavan would like to see the introduction into New Zealand of the leaf cutter bee as used extensively in North America, where an acre of lucerne produces around 1000 pounds of seed, against the New Zealand average of 55 pounds for the same area. A leaf cutter bee pollinates 15 flowers a minute.

Commenting that a great deal of research will be undertaken before any new introductions are made, Dr Donovan referred to the fact that pollination was one of the most neglected aspects of New Zealand agriculture, and that in the States, farmers were pleased and eager to pay for pollination services whereas in New Zealand, the farmer expected to be paid by the beekeeper.

Dr Donovan gained his doctorate in entomology at the University of California. It is good to see academic researchers returning to New Zealand instead of leaving.

★ ★ ★

IT'S BEEN HEARD BEFORE but its worth repeating. "A bee sting is only one twelfth of an inch long, and its temperature is that of its surroundings. The extra four inches and 500 degrees are due to the imagination of the recipient". I could have sworn the sting was longer than that when the blighter poked it's barb into my olfactory orifice.

★ ★ ★

JACK GREER, a queen breeder at Wyong 60 miles north of Sydney, is shipping queens to West Iran, India, Hong Kong and other Asian markets to improve cross bred strains in those areas. Producing 20,000 queens a year, each exported queen fetches between $20.00 to $25.00* and of course, he also supplies Australian requirements. Jack's current programme includes cross breeding of Caucasians for the European market because, he says, the Caucasians do not sting.

* Some price. Some queens!

★ ★ ★

AN INTERESTING NOTE from Syd Line, one-time apiary instructor for Hawkes Bay and life-time beekeeper reveals that the late Hon. R. Hanan, former Minister of Justice and respected by all shades of political opinion, was himself a beekeeper in pre-war days.

In company with the late Brigadier Hargest, twelve hives were kept on a farm a few miles north each of Invercargill, and Ralph Hanan used to travel in Syd's truck from Invercargill to the site, acquiring as much knowledge and know-how as possible by searching questions and careful application to hive handling.

Ivor Forster of Oamaru was another beekeeping associate who writes of his very pleasant association with Ralph Hanan, referring to him as "as nice a person to meet as you would encounter in a life-time". Who could wish for a better epitaph.

★ ★ ★

THE 1969 NEW ZEALAND Expedition to the European Alps successfully climbed the difficult north face of the Matterhorn, the Bonatti pillar of the Dou, the north face of the Grande Jorasses and the notorious north face of the Eiger in addition to other difficult and dangerous climbs requiring great tenacity and energy.

Graeme Dingle, writing to the Honey Marketing Authority, praises the energy they obtained from New Zealand honey carried in their packs, and re-iterates his belief that honey is one of the best concentrated foods to keep up ones strength and for the replacement of calories. The water bottles were always charged with honey and lemon crystals as flavouring.

The Honey Marketing Authority gave the expedition supplies of honey, which will also be carried on their expedition to Himalayas in January of next year.

★ ★ ★

APIACTA, the international technical magazine of apiculture and economic information published by APIMONDIA, the International Federation of Beekeepers' Associations, has the support of the majority of honey producing countries, and their magazine is printed in English, French, Russian, German and Spanish. The technological data recorded is invaluable to scientists and producer organisations and, in addition, contributors relate particular problems experienced in their part of the globe.

One such contributor relates his difficulties in teaching lethargic and itinerant tribesmen to keep bees with a semblance of management technique, and he certainly has his problems.

In Rhodesia, the African native gathers the combs, takes them home and sorts out those containing brood, which are used for making beer. Capped combs are extracted by the mouth by squeezing the comb between the teeth and spitting the honey into a container! The honey is later sold. A mental note has been made to take a violent dislike to honey should a visit ever be made to Rhodesia!

The editorial staff of APIACTA magazine is comprised of experts from USA, Czechoslovakia, Italy, France, Germany, Sweden and Canada and their publication is very well worth while reading. The subscription is 4 US dollars. Incidentally New Zealand receives a proverbial 'pat on the back' under the heading "A REMARKABLE PERFORMANCE" in which congratulatory reference is made to our ability to market 10 floral source honeys on the world market.

★ ★ ★

IT'S A BIT HARD to know what to believe and what not to believe, especially when the experts disagree. On the subject of the leafcutter bee advocated as the ideal pollinator for clover, it is interesting to note that the California seed industry is convinced that the future is with the honey bee and not the leaf cutter. A hybrid to be tested out in the 1970 season of a honey bee strain specifically for alfalfa pollination will help to show which opinion is right.

★ ★ ★

INTERNATIONAL QUEEN COLOUR MARKING code for 1970 will be blue. Now that NZ queens are exported we may have to remember that years ending in 1 or 6 are marked with white on the thorax, 2 or 7 red, 4 or 9 green and 5 or 0 blue.

Beekeepers' Technical Library

The following new books have been added as Presentations by Foundation Life Members of the Library:

"THE DANCE LANGUAGE AND ORIENTATION OF BEES" by Karl von Frisch — presented by Harry Cloake, of Fairview, Timaru, First Foundation Life Member.

"COMMUNICATION AMONG SOCIAL INSECTS" by Martin Lindauer — presented by James Richard Barber of Pio Pio.

"THE STORY OF POLLINATION" by B. J. D. Meeuse — presented by Trevor Sidney Wheeler of Otorohanga.

"BEES—THEIR VISION, CHEMICAL SENSES, and LANGUAGE" by Karl von Frisch presented by John William Fraser, of Ryal Bush.

"BEEKEEPING" by John E. Eckert and Frank R. Shaw, presented by William T. Herron of Greenvale.

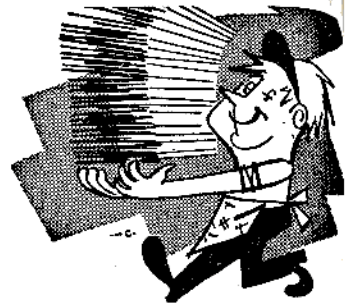
"THE DANCING BEES" by Karl von Frisch, presented by Norman Edgar Glass of Waikaka.

Kindly loaned to the Library for three years by Mr J. R. Simpson of Gore:

"BEES ARE MY BUSINESS" by Harry J. Whitcombe.
THANKS to Mr Simpson for loaning the above book and to the two beekeepers who supplied the issue of **"THE NEW ZEALAND BEEKEEPER"** missing from the Library file.

CHRIS DAWSON,
Hon. Librarian, P.O. Box 423, Timaru. Library List and Rules available to members of any branch of National Beekeepers Association.

BRANCH NOTES



CANTERBURY

A relatively mild winter, despite some very hard and near record frosts, has caused the bees to consume lots of stores.

Hives have opened up in good strength and the warmest September on record helped spring build-up. This has also produced the best willow flow for many years, despite many cloudy days during the flow.

Light rains in late September and early October have helped pastures but we appear to be set to break the record for dry years. Inland areas fared best with over an inch of rain, while near the coast the fall was less than half an inch. Much more rain is needed if we are to produce a crop of honey, and with the old Nor-westers about, the plains could burn up almost over night.

Unfortunately the branch was unable to find a suitable site for a field day so it appears that none will be held this year.

Reported by R. R. Bushby.

★ ★ ★

NORTHLAND BRANCH

We are having a very peculiar season so far with August and early September very mild and the later part of September very cold with frosts and hail showers. The result is the bees are not coming along as we would like. The Queen raisers are finding conditions against them with virgins unable to go on mating flights.

On October 11 a very successful field day was held at Mr & Mrs L. Quaife's home yard just out of Maungaturoto. Thirty members attended from districts around.

Mr Jack Byers gave instructions on spring management. At one time there were only 3 or 4 members present, but they returned with veils and hats. The day was a little cold the bees thought!

Mr Lionel Quaife gave an interesting talk on his method of queen raising and after lunch Mrs Rose Quaife gave a demonstration on waxing sections with a hot iron.

We are all looking forward to a better season than last year although some bees are short of stores while others are in good heart. Our thanks to Mr & Mrs Quaife for giving us the use of their honey house and equipment and for the sumptious morning tea.

Reported by Arthur Tucker.

★ ★ ★

HAWKES BAY BRANCH NOTES

After a cold damp beginning, the weather finally relented and cleared for the afternoon Field Day of the Hawkes Bay Beekeepers Association, held in September at Gwen & Bill Dorward's "Waggon Wheels" Apiary at Havelock North.

"Some Impressions Gained, by attending the Beekeepers Seminar", was the subject of an opening address given by Walter Watts, an Englishman now beekeeping in H.B. This was followed by Paul Marshall, our local apiary Instructor, with a talk on the value of pollen in the hive, and a demonstration of a pollen drying box or cupboard, he had designed.

Great interest was shown in a pollen-trap working on a hive, and in a supply of collected pollen, showing the different sources available at this time of year.

Graham Walton, from Palmerston North very ably discussed and illustrated the methods used by the bees in the collection of pollen.

Ian Berry gave a short talk on queen-rearing methods in use in H.B. followed by a question and answer discussion.

Afternoon tea, and a vote of thanks to the Dorwards, for the use of their apiary brought to a close a popular and very instructive afternoon.

Reported by F. D. Maultsaid (Mrs).

★ ★ ★

NORTH OTAGO

The first spring Field Day the Branch has held proved a success, there being approx. 70 South Island beekeepers present. The prospects of a good day didn't look promising as on the day before snow fell but the weather man changed his mind and pulled one out of the box for us. A perfect day.

Our President (Mr Stan Wilson) opened the Field Day at 10.30 am., welcoming visitors etc.

Mr Max Lory was our first speaker and explained the importance of suitable trees to beekeepers. Due to modern agricultural methods such as high stocking rates, weed eradication, bush clearance, and increased cereal growing the time has come for beekeepers to look seriously at the problem of supplying early pollen and nectar sources for their bees. This can be done by planting suitable trees to do the job. Species suitable to Canterbury and Otago are ornamental willows, gums, lime, horse chestnuts, hebes, rowan, sycamore, wattles, five finger, and flowering currant.

Mr S. M. Hurst, a local farmer and member of the branch, was the next speaker and said that there was a wide interest in tree planting by farmers, not only to provide shelter, but also from an aesthetic point of view. In this type of tree planting many species useful for bees can be included.

Mr Hurst said the best way for beekeepers to encourage farmers to plant suitable trees for bees is to set an example by planting such trees themselves. He added that it would be advisable for the beekeeper to obtain the permission of the property owner first. Mr V. A. Cook, apiary instructor, Dept. of Agriculture spoke of the importance of adequate pollen sources to bees to ensure maximum honey production and pollination services. Pollen is also vitally important to honey bees because it provides the protein content of their diet. Without pollen bee colonies cannot rear young.

Mr Harry Cloake and his son Mervin from Timaru explained and demonstrated their method of raising young queens by the nuclei method and how they use puffball smoke to anaesthetize the bees. Like many others I had never seen these puff-balls before and when Harry said that they grow everywhere and he had ample supplies at home he was soon relieved of the supply he brought with him by beekeepers keen to have a try themselves.

Mr L. K. Griffin, a retired Southland beekeeper now living in Oamaru, spoke of his own experiences of wintering bees on sugar syrup.

Mr Griffin used this system for many years and answered several questions by interested beekeepers.

Mr George Winslade (Vice President N.B.A.) spoke on N.B.A. matters and of what took place at a recent meeting. Mr Harry Cloake also gave a short address on the H.M.A.

A very successful field day concluded at 3.30 and I hope we will see as many, if not more at our next meeting

Reported by R. B. Mackie.

★ ★ ★

WAIKATO

A much better Spring has been experienced, conditions being drier than for many years.

Early sources, have varied greatly, heather being good generally, but five-finger and willow very poor, despite reasonable weather. Barbary in some areas seems to have been badly frosted, and the yield generally very low to none.

Cold windy south westerlies prevailed for the last few weeks, and hives in inland areas have not come forward as expected.

In bush areas rewarewa has very little flower coming, while Tawari and Kamahi seem about average.

Queen raising has been slow and mating days few and far between, but a good proportion of layers is being gained.

Our crop will depend on weather now as the ground is fairly dry, and November rains will be needed to give a good crop.

Reported by C. Bird.

A BEE IN MY BONNET

By D. W. Roberts

(Courtesy of "Bee Craft")

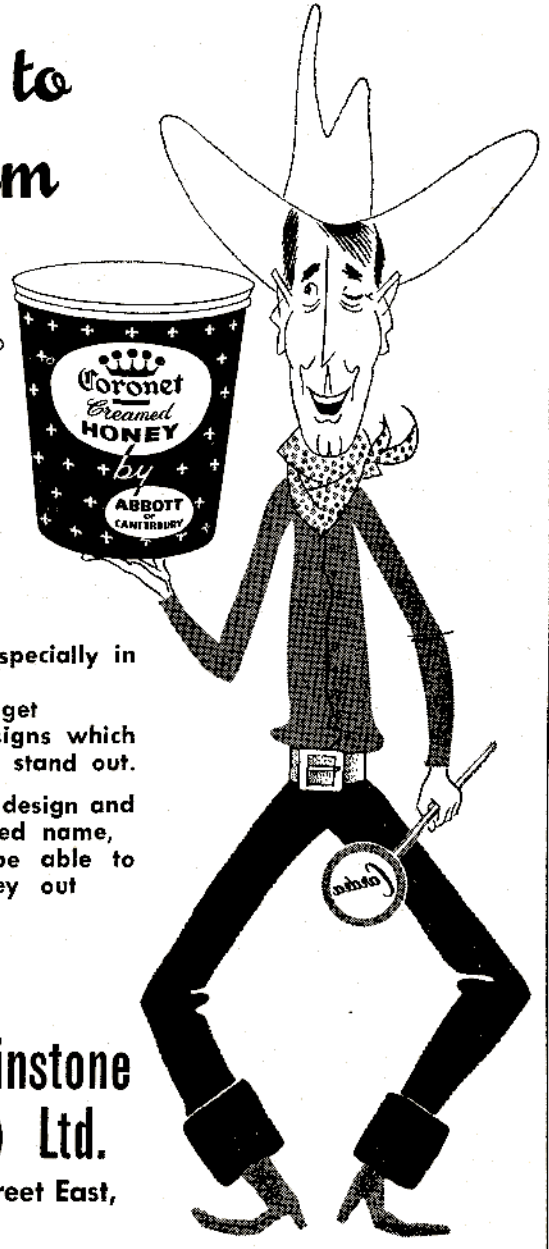
If there is one bee which I detest it is the "follower." You take an innocent stroll past the hives admiring the peaceful and busy scene when one of these pests suddenly appears, dogging one's footsteps in ever narrowing circles and positively inviting hostilities. But make a pass at it and however quick and experienced you may be, it always gets there an easy first. So it has been my usual custom to ignore their attentions with the general result that they get tired first and go off to seek another victim.

Last week, therefore, when once again I became the object of interest to one of this tantalizing breed, I pursued the usual line of action and though retreating, I forebore to give it "a fourpenny one." However, persistence was its second name and when it finally landed on the lobe of my left ear like a cinder, I was a bad second when attempting to swat it. To add insult to the injury, after stinging me it made "a bee line" for the interior of my left ear. It is difficult to describe the sensation of hearing and feeling a bee making an examination of the aural canal, but I can assure you that it is unpleasant and uncanny. The immediate problem however was how to fish the blighter out.

Strangley enough there was experience to fall back upon; years ago in Ceylon, my young son was similarly the victim of the attention of a mason wasp and the attempts to drown the intruder by filling the ear with water not proving successful, olive oil was substituted and in no time the wasp "came up for air" and was easily ejected. So profiting by the recollection my ear was filled with oil; a bedraggled "follower" duly surfaced and paid the price for her temerity.

It pays to brand 'em

Don't sell your honey blind! If you want people to buy **your honey** — not just any honey — you must mark it with your brand or name.



- **Branding pays, especially in CARDEA cartons because you can get bold striking designs which make your name stand out.**
- **With a distinctive design and a boldly displayed name, customers will be able to pick YOUR honey out AGAIN**

Frank M. Winstone (Merchants) Ltd.

71-79 Customs Street East, Auckland

SOUTH ISLAND REPRESENTATIVE: P. G. COLLINGS

33 Charlcott Street, Christchurch **Phone 516-062**

Some Comments On

MINISTERIAL STATEMENTS

by J. R. Barber, former member of the H.M.A.

Both at Conference and at the Ruakura seminar there was a large proportion of young men; a necessity for the health of the Industry. These men cannot be expected to assess the Minister's address to Conference if he refers to the inauguration of the H.M.A. in 1953. In fact I am possibly the only one left who was in an Executive position at both times. Nor is it possible to comment at any length or suitably, in a question or two at Conference, on a Cabinet Minister's address, and therefore suggest you publish the following comments now.

"In 1953 producers were given the opportunity to organise the Marketing of their own products etc."

National Party policy was to dismantle the Internal Marketing Dept., and if any Marketing organisation were to continue there was no alternative to the Industry's accepting the responsibility for running the new H.M.A.

I well remember the reluctance of all of us to do this, and meeting Mr Fawcett, Director-General of Agriculture, who said **"Gentlemen, from December 1st there will be no I.M.D."**

Now this was a Government business, and there was just under 1000 tons of honey on hand. It was taken over at a valuation of 9d. per lb., book valuation 11½d. per lb had been paid to producers, so the reserves of about £40,000 suffered accordingly.

It was claimed by the Government representative that a profit had been made, but 600 tons was sold overseas, returning about 9d. per lb., and something over 300 tons was sold on the local market, which returned 11d. per lb. Any profit had been earned, and in any case there was a loss on what had been paid out to producers, though not on book valuation. Government could have recompensed the industry from a large sum held as accumulated profits from the combined operations of the I.M.D.

It was one of the few times I had no Executive position, but Mr Holyoake gave me an interview, understood and appreciated the position. Industry leaders, however, did not back up and appeared not to understand this loss had occurred.

No Industry organisation would have accepted the running of the new Authority without an assurance of adequate finance, and we had this assurance from Mr Holyoake. He said, **"Fair, even generous terms, which others might well look at with envy".** So the Government's intention was fair and generous. Nevertheless the new Authority could not pay their stock debt for a long time, because there was no assurance of overdraft accommodation to pay for the new intakes of honey.

It has been suggested that the Industry had this interest free, but I doubt if it is legal to charge interest on a debt, unless the intention to do so has been previously declared.

The correct course was to repay the debt as the stocks were sold, and the H.M.A. should have been assured of finance to operate. The reserves had been established because of the Labour Government's stabilisation policy, and during a period when honey was a black market commodity, the payout averaged 5½d. per lb.

"Stability has been maintained over the years despite fluctuations in supplies, but success of the Authority's Marketing policy has been achieved at the expense of financial strength, using reserves to pay the producer in years of short crops."

This is certainly a testimonial to the Authority. Its main purpose is to maintain stability, and if reserves are created at the expense of payout, when the payout, especially for the North Island producers, has often been less than the cost of production, this is the best and most reasonable use of reserves. While we have the unsolved major problem throughout the Western World of inflation of costs to the extent of probably 3½ per cent a year, there is little point in creating liquid reserves, when the H.M.A. would find it difficult to place five per cent to a reserve, and make an adequate payout to producers.

"This was a radical change from its earlier role of drawing off the supplies for export, and allowing the local market to be supplied mainly by private packers."

As far as I am aware no Authority has ever accepted this as its function. Rather have I often heard it stated that the Authority receives its supplies to sell to the best advantage of its suppliers, either on the export or local market.

Moreover I distinctly remember our Government Representative's concern in a year of short supply that no area of the local market should be left without supplies. In fact an assurance was given to him that sufficient supply, if necessary from the H.M.A., would be made.

Marketing organisations have always endeavoured to keep their own packs on the local market; there is no change in policy here. Most of the H.M.A. members saw the takeover of the local branches as a necessary step to keep the Authority's overhead costs in some proportion to its intake.

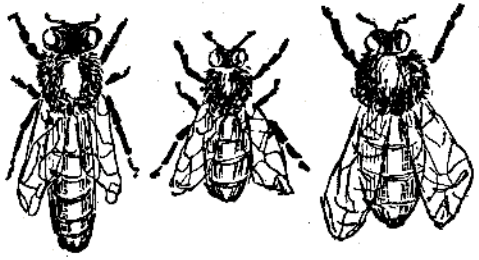
It is important, if background of the industry is to be reviewed, that the industry's viewpoint of these periods should be given, rather than statements made to justify increased interest charges, and a policy asking that producers should not only have to finance their own new season's production, but also their last season's crop until the returns come to hand.

If the Minister was critical that the takeover of the branches was without sufficient prior Government consultation I would agree; but he has his own representative present at all times to watch Government interests.

COMB HONEY PRODUCERS' ASSOCIATION

The following suggested prices for Comb Honey are given as an indication only for the new season.

	TO THE	TO THE	TO THE
SECTION HONEY	WHOLESALER	RETAILER	CONSUMER
12oz Net or Over	$2.80 per dozen	$3.22 per dozen	34c each
CUT COMB			
7oz and over	$1.45 per dozen	$1.67 per dozen	18c each



A QUEEN REARING VENTURE on RAROTONGA in 1933

By Arnold H. Simpson

Rarotonga lays 1800 miles N.N.E. of Wellington. It is the largest island of the Southern group of Cook Islands and is the administration centre and seat of Government for both North and South Groups.

Six and a half miles long and four miles wide it is oval in shape completely surrounded by coral reefs which are pierced by small streams at a few places. A very beautiful island with golden beaches, blue lagoons and high peaks in the centre, the highest being Te Atu Kura 2100 ft. above sea level.

In 1931 my father the late Edward Simpson was on a round the world voyage. After visiting his birthplace Nottingham, England and also Buckfast Abbey of Brother Adam fame, and sampling the heather honey there he sailed to America and to the A.I. Root Company. His main aim was to get new strains for his apiaries at Woodbury, Geraldine.

After travelling by Greyhound bus via Niagara falls and Cleveland, Ohio, he arrived at A.I. Roots. Mel Pritchard, queen breeder for Root's Basswood Apiaries, was only too pleased to sell him three leather coloured Italian queens, which subsequently produced daughters of a quiet disposition and good workers.

Travelling across Canada by train with these precious queens in his pocket, or inside his shirt, he passed through the high cold Rocky mountains.

He set sail from Vancouver on the 3 week voyage to New Zealand, and by tipping the chief steward obtained a cabin with a porthole so that he could keep the quens and bees cool in their large size mailing cages, steaming through the tropics in pre-air conditioning days.

Closing the porthole carefully, every few days he released the queens and attendant bees for their cleansing flights in his cabin. He also securely locked the cabin door, as a visiting steward would doubt father's sanity if he found a cabin full of bees.

The queens and bees were easily recaged when they landed on the porthole window.

As the days passed, father became more worried, because of the rapidly dwindling number of worker attendants in the queen cages, now nearly 3 weeks after leaving Medina, Ohio.

While the ship was in port at Tahiti for a few hours, he made a quick search but failed to find any bees to refill the cages.

Two days later the ship anchored clear of the reef at Rarotonga. So quickly boarding a pitching lighter, alongside the lowered gangway of the ship, in the open sea, father was towed ashore by a tug boat.

With a sigh of relief he located the only apiary on the island owned by a European settler, a Mr Tom Shearman, and was thus able to refill the cages with young attendants for the remainder of the journey back to Geraldine.

So the seed of an idea was sown—why not rear queens on a warm island in mid-winter when ice and snow covered South Canterbury?

In June 1933 he set sail for Rarotonga with a daughter of the A.I. Root queen in a specially ventilated 4-frame nuclei box, and a suitcase full of queen rearing gear.

The bees on Rarotonga were rather neglected as the owner was an old man, but using the limited amount of equipment available to best advantage father got busy.

He grafted from the nuclei using the supersedure impulse: i.e. leaving the queen in the cell-raising hive under an excluder and grafting into the brood chamber above, 20 cells per colony. In all, approx. 100 queens were reared.

Ants were a problem with weak hives when virgins were being mated. The hives were put on stands with legs in tins of disinfectant water. Large centipedes and land crabs were thrills to add to the adventure.

After 3 weeks father liked the island so much he cabled to N.Z. to get my mother, sister and myself to join him. We arrived safely after 5 day's voyage on the S.S. "Makura", a ship similar in size to the "Maori". To me—then a school boy—this was indeed an adventure, to live on a real Treasure Island for 4 whole weeks.

A chance remark by a passenger on deck viewing the island on arrival, that "anticipation is better than realization" did not spoil my enjoyment of Rarotonga. The S.S. "Makura" dropped anchor in 20 fathoms of water ½ mile clear of the deadly (for ships) coral reef, opposite the opening in the reef to Avarua, the capitol and administration centre.

The small harbour here was large enough for small schooners trading in Copra to the outer islands of the Cook group. The welcoming fleet of outrigger canoes was larger than usual as the P.M. of New Zealand, the Right Hon. George Forbes was officially visiting Rarotonga. Ship day was indeed a red letter day for the islands as they displayed their handcrafts along the roadside, mainly, strings of beads made from shells and seeds, also baskets and hats of all shapes and sizes. The month quickly passed, canoeing and swimming in the blue calm waters of the lagoon and fossicking on the reef at low tide.

With the temperatures in the 80's and occasional tropical showers, a minimum of clothing was needed. Coconuts, bananas, oranges, mandarines and tomatoes grew in profusion.

Came the end of July, father packed our bags and caged the island reared queens and boarded the S.S. "Makura" on her return voyage from Vancouver to Wellington, and so home to the bees for Dad, and school for me.

THE AFRICAN BEE in BRAZIL

By Roy Grout, Illinois, U.S.A.

(Reprinted from "American Bee Journal")

Two recent articles in the U.S. press have again brought up the problem of the importation to Brazil of the African bee, **Apis mellifera adansonii.** One was a Reuters release from Sao Paulo, Brazil bearing the title "Blame Killer Bees for Dozen Deaths." The article alleges that wild African bees imported in 1956 to improve strains of honey bees, have been blamed for killing a dozen persons, hundreds of domestic animals, and have invaded parts of Argentina, Uruguay and Paraguay.

The other article appeared in Time magazine, April 12, 1968, under the title "Bad Bees of Brazil." This article alleges that ten people ,hundreds of cattle and horses, whole flocks of chickens, dogs, cats, turkeys and pigs have died from their stings. It further alleges that the African bees have overwhelmed the Italian and German bees, and are spreading at the rate of 200 miles a year, casts doubt on whether they can be halted before they spread southward through Argentina and northward through Colombia, Central America, Mexico and into the U.S. This was the second article to appear in Time magazine about this situation.

We have reason to believe that these articles have overstated the case. One of our correspondents in Argentina, Professor M. Katzenelson, writes, "The newspapers have transformed a mosquito into an eagle!" We would say, "They have made a mountain out of a mole hill!"

Apparently, much of this started when Paulo Nogueira-Neto of Brazil wrote an article entitled "The Spread of a Fierce African Bee in Brazil," which was published in Bee World 45(3):119-121 in 1964. This is referred to in an article by G. Ntenga in the American Bee Journal, January 1968 issue, entitled "The Honey Bees of Tanzania." We quote from the article as follows:

"A remark by Kerr (who imported the African bees in an attempt to breed a better honey producing bee for Brazil) on the plateau variety, which he imported into Brazil 10 years ago, was that he found the best strains of bees to be the most prolific, productive and vigorous bees. In correspondence, he said that the main difficulty with **Apis mellifera adansonii** was its viciousness and that some beekeepers were thinking about destroying the **adansonii** colonies, while others were inclined to retain them because of their greater production and resistance. The vigor of this bee is demonstrated by Nogueira-Neto (referring to the article mentioned above) when he reported the rapid spread of them in Brazil and the suppression of some other species of native bees. He also has remarked on their extreme aggresiveness, but the question is subject to further investigation. However, these reports on the 'Italian-like but terribly aggressive bee' are genuine and one of the precautionary measures when importing **adansonni** should probably be controlled breeding with emphasis on its size and other characteristics."

The American Bee Journal has a letter from Paulo Nogueira-Neto which states. "I would appreciate your telling your readers that the question of the extreme aggressiveness of the African honey bee which we have in Brazil is

now a very well-known fact. There is no need for further investigations to establish it. After what happened here, no one should attempt to take African bees to other places.

"Another statement that I would like to clarify is about our native Brazilian bees. As far as I know, no species of them was eliminated by the **adansonii** honey bees. However, I have had several reports that in some regions, such as the southern coast of Sao Paulo and the coast of the state of Parana (Professor Father Moure), that stingless bees were greatly reduced in numbers as a result of the invasion of **adansonii.** Also Jose Maria de Miranda Uchoa wrote me that in Barra do Corda, State of Maranhao, in the outskirts of the Amazon region, the native **Melipona compressipes** is suffering from the presence of the African bee. However, this is a question that needs further investigation."

After the first article on the African bee appeared in Time magazine (Sept. 24, 1965), we wrote to Dr. Warwick Estevan Kerr and this is a part of his reply: "As you suppose, there is a lot of fiction in the **adansonii** bee affair. In 1949, twenty persons died of bee stings in Texas (by that time with 7 million people). In the last year (1964), we have had four deaths from bee stings in Sao Paulo State (population 13 million people)." And he added — "There is more commotion about it in the U.S.A. than here."

More recently has come to our attenion an articles entitled "The History of the Introduction of African Bees to Brazil," by Dr. Warwick Estevan Kerr which was published in the South African Bee Journal 39(2):3-5 (1967) and reprinted in the Australian Bee Journal of April 1968. Kerr reviews the history of his attempts to import **adansonii** to Brazil to improve the productivity of their native black bees, **Apis mellifera mellifera.** He also tells how he finally had 47 colonies that survived—one headed by a queen from Tanzania and 46 from the Pretoria region of South Africa.

In 1957, 35 colonies were moved to an Eucalyptus forest for testing. Every colony was provided with a double queen excluder (one vertical). However, a visitor took out the screens. This was learned 10 days later and, by that time, 28 colonies had absconded.

A production test was done from June 25 to August 10. The average yield per colony of the Italians was 42.28 pounds, the Africans averaged 80 pounds and the blacks (Germans) 19.27 pounds.

A new test was done the following summer. Italians, Africans and blacks averaged respectively 53, 93 and 27 pounds. These tests showed a superior productivity of the African bees.

Meanwhile, those 26 swarms were reproducing, multiplying and "infesting" the continent. Since the local black bees were gentler than the bees from Africa, Brazilian beekeepers regarded the new bee as impossibly vicious. Consequently, instructions were issued by Kerr's department warning that: (a) Nobody who was not an experienced beekeeper should collect swarms; (b) Nobody should keep hives within a fourth mile of chicken yards, pig yards or stables; (c) The handling of African bees should not be attempted without using good bee gloves and smoke.

In 1962, 1963 and 1964 quite a number of Italian queens were distributed to beekeepers; every commercial beekeeper they tried complained after 2 or 3 months that the pure Italians were poor honey producers compared to the African bees.

So in 1964 Kerr tried a different technique — the distribution of virgin Italian queens to be crossed with African drones in the beekeeper's apiary.

Kerr continues to say, "I was most astounded to find that the productivity of the cross-bred bees was almost as high as that of the African bees and they are nearly as gentle to handle as Italians.

"Since then (December 1964), this laboratory has distributed about 5,000 virgin queens for experimental purposes with the following instructions for selection: (1) Substitute every fierce or unproductive queen by an Italian virgin;

THE AFRICAN BEE IN BRAZIL

(2) Put a drone frame in every good hive (productive and gentle); (3) Every 6 months test again for gentleness and substitute the queens of fierce and non-productive colonies by Italian or Causasian queens. In this way the problem of fierceness was overcome throughout the apiaries in less than 3 months, and production is considerably increased.

"The number of accidents has been considerably exaggerated. The State of Sao Paulo (centre of the distribution with a population of 16 million) had in 1966 six sting deaths, fewer than the casualties due to bee stings in the State of Texas (population about 12 million)* where there are no African bees. All the deaths in the last 4 years have been checked by a researcher. With one exception (a child left one yard from a hive), all fit into the category of strong ellergy (anaphylaxis), and therefore affect old people much more than younger ones. Besides, every sting by wasps, which are very common in Brazil, is now attributed to African bees.

"The amount of poison in (the sting of) African bees is less than that in Italian bees, but the Africans are more eager to sting. The quality of poison is about the same. We estimate, by means of data from guinea pigs and dogs, that it would take between 800 and 2,000 stings to kill a nonallergic man weighing 165 pounds; however, a few stings or even a single sting would be enough to kill a highly allergic man. It is worth remembering that penicillin kills almost 100 persons a year in the U.S.A. and sends more than 1,000 to hospitals for treatment."

We have written to Dr. Kerr for the latest information and, when we have it, we will inform our readers. Certainly, the above quotations from his article confirm our opinion that recent news articles have overstated the case against the African bees.

From another of our Argentine correspondents about the danger of the African bee invading that country, we have this report: "We don't see any risk that the African bee may come down into the Buenos Aires Province where the honey for export is produced. The African bee, we believe, can only progress in forest country, not in the Pampa lowlands where there is no possibility to build up colonies without artificial hives due to lack of trees, and where it would be easy to fight them with insecticides from airplanes."

From still another Argentine correspondent: "With respect to the invasion (of the African bee) into the Province of Corrientes, a commission of technical representatives of the local university was formed by the Governor of the State ,and together with collaborators, to guard against and control the southern advance of the bee."

Finally, from a correspondent in Colombia where .it has been feared the African bee might spread to: "In answer to your question about the African bees that were introduced into Brazil, I have read some things about them and especially about their combative nature. However, we do not know them nor have them in this country, nor have we seen them mentioned in other South American states."

Thus, we concude our brief review of the African bees in Brazil in sincere beliet that we are right in our statement that the articles in the news media have overstated the case. The recent article in Time magazine quotes Samuel E. McGregor, chief of the Apicultural Research Branch of U.S.D.A., as saying in his philosophical manner, that although African bees sting like hornets—after all we have learned to live with hornets.

*The population of Texas increased from 7 million in 1949 to 12 million in 1966.

BEEKEEPING SEMINAR

at Ruakura

The 2nd North Island seminar held at Ruakura on August 20-21 was very successful and attended by 120 participants.

The organising committee comprised of Bruce Forsyth, Dudley Lorimer, Don Barrow and Alf Bennett together with the close co-operation of the Department of Agriculture and officers produced an instructive and worthwhile forum for the benefit of commercial apiarists and hobbyists alike.

In the absence of the Superintendent of Beekeeping on business associated with the new Apiary Act then before the House in Wellington, the chair was taken by Mr Ian Forbes and the proceedings were opened by Mr Charles Horner an active 84 year old beekeeper who has been 'in the game' for 72 years and lives at Waihou, and is believed to be New Zealand's oldest active beekeeper.

Apiary Instructors and Apiculturists of the Department of Agriculture gave practical addresses on varying aspects of beekeeping practice, and the important cost and profit factors were dealt with by a public accountant and a District Commissioner of Taxes The money to be saved by the efficient handling and salvaging of beeswax was detailed by Kevin Eeroyelx.

For the benefit of the industry in general, material from the Seminar will be published in THE NEW ZEALAND BEEKEEPER as space permits, commencing with Mr Ivor Forster's contribution on the subject of SWARMING AND ITS CONTROL in this edition.

BEEKEEPERS TO TOUR CANADIAN PLANTS

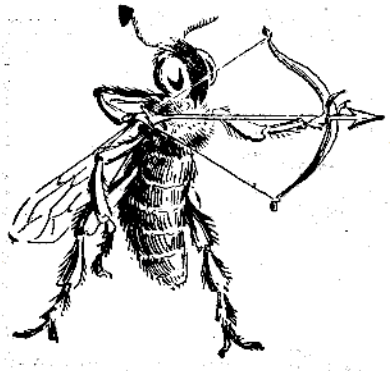
Good support has been received for the proposed tour of Canada next year and George Winslade, 1H. RD, Oamaru, the organiser has been getting down to detail now that the tour is definitely 'on'.

Plans are to visit a number of commercial beekeeping establishments across Canada as well as the research establishment at Guelph and the University of Manitoba in the wheat belt, and to cover famous sight-seeing and scenic centres at Niagara Falls, the St. Lawrence Seaway, the Houses of Parliament in Ottawa, Candle Lake, Peace River and an oil drilling rig in operation with many other places of interest.

The tour will not be all work and no play, for although the principal object will be to learn Canadian methods of beekeeping and packing, participants are promised more than good value for their money, most of which will be eligible as a tax deductible item.

George can still take a few more in his party, but early reservation is essential because air and land travel, hotel reservations and all the detail required for a smooth running tour of this magnitude has to be arranged well in advance. It would be asking for a shambles to be left to the last minute.

Full details of the itinerary and inclusives cost can be obtained from George at Oamaru.



DANCE or SMELL ?

By Ernest Douglas

in the "Christian Science Monitor"

Bees have no "dance language" in which they communicate the direction and distance to a newly discovered food source. Their actions are governed by odours, largely if not entirely.

So states Dr Adrian Wenner of the University of California at Santa Barbara, first natural scientist to challenge the "dancing bees" theory promulgated by Dr Karl von Frisch of the University of Munich. It has been accepted as a logical, if marvellous, explanation for aspects of bee behaviour that have puzzled mankind for thousands of years.

Other entomologists at the United States Bee Research Laboratory in Tuscon are not so sure that the von Frisch hypothesis is demolished. They suspect that part of it may still be valid.

Judgment is being withheld pending further work by Dr Wenner and his associate, Dr Patrick Wells of Occidental College. Their project is supported by the Office of Naval Research and National Science Foundation.

The von Frisch findings, in short, proposed that when a scout bee locates a source of food it returns to the hive and puts on a dance that gets the colony excited. The scout does a "round dance" and "tail-wagging dance" which, the German researcher decided, indicate direction and distance to the food the bee has just visited. He also surmised that there was a third factor: vigour. The vigour theory states that the energy the bee puts into its movements reveals the nature of the food.

The vigour surmise is false, Dr Wenner asserts, with ample evidence based on experiments more elaborate and better controlled than the Munich tests of Dr von Frisch.

His experiments show that when a successful scout returns to the hive, it's the odour clinging to the bee's body that gets the other bees excited. The scout does dance, just as Dr von Frisch and many others have observed, but Dr Wenner thinks the bee does so only as a stimulus to the rest of the worker bees to get out and search for whatever has been found. Those recruits, says Dr Wenner, are just as likely to fly in one direction as another, and they have no idea of the distance they must travel.

He has placed dishes of food only 100 feet from a hive. After a scout comes along and flies back home, it takes 10 minutes or more for recruits to arrive, and then only a few.

Usually the food is sugar, but when it is odourless sucrose the scout gains no recruits at all. The bee carries no odour to its hive mates.

Every unaccustomed odour within flying distance of Dr Wenner's colonies is soon investigated by the bees. If a gardener mows a lawn, for instance, bees are soon buzzing around to see if the new smell denotes food.

He explained that as a colony works on one food source — say a certain flower — its odour builds up in the hive. This makes it difficult to persuade that colony to switch to another flower, even one that is richer in pollen and nectar. The bees respond only to that accustomed odour.

It is no news to entomologists that odours guide not only bees but also many other insects in mysterious ways. Odours that originate with the insects themselves are called "pheromones." The pheromone of a queen is what keeps her subjects working away happily, even though most of them may never see her. But remove the queen, her odour disappears, and the colony becomes demoralised.

Much work with pheromones and odours is in progress at the Bee Culture Laboratory in Tuscon. Dr Lonnie Standifer, for instance, has long been analysing pollens chemically as a step toward formulating an artificial pollen acceptable to bees. Now he has turned his attention to isolating the odours of natural pollens that are preferred by bees. Gordon Waller is trying to identify odour fractions in the blossoms of some alfalfas that bees visit readily while scorning other alfalfas nearby.

"Now Dr Wenner's discoveries have suggested new odour projects for us to pursue," says Dr Marshall Levin, bee-research laboratory director.

SITUATIONS VACANT

A youth is required for Commercial Apiary work in a large Waikato outfit. Experience desirable but not essential.

Further particulars from:

"PRODUCER"
N.Z. BEEKEEPER

BUY

8 FRAME REVERSIBLE HONEY EXTRACTOR IN GOOD CONDITION.

Please write:-

TWEEDALE APIARIES
TAIHAPE.

FOR SALE

HONEY EXTRACTOR

2 frame, bucket strainer etc. Please write for further particulars to:-

Mrs F. Collins
Taoroa, R.D.
TAIHAPE.

EXTRACTOR

PENDER 4 FRAME, hand operated. Little used. What offers?

Call or write:

83 Clovelly Road,
Bucklands Beach, Auckland.

QUEENS QUEENS QUEENS QUEENS

Vigorous Italian Queens
raised in natural colonies.
Booking orders now for 1970
Some Autumn queens available.

Chris Dawson,
P.O. Box 423, Timaru.

QUEENS NUCLEI BREEDERS COLONIES

50 FRAME RADIAL EXTRACTOR
BATES AUTOMATIC PACKER
800 FRAME TYPE TIN FEEDERS

Apply: NGAROMA APIARIES
Burwood Road,
MATAMATA.

FOR SALE

SPEEDWAY, VERTICAL TUBE, 2HP DRIP FEED, STEAM BOILER. ALMOST NEW. EXTRA STEAM PIPING AND VALVES. WHAT OFFERS? WOULD CONSIDER EXCHANGE 8 FRAME EXTRACTOR.

TWEEDALE APIARIES
TAIHAPE.

EXTRACTOR

PENDER 6 FRAME REVERSIBLE EXTRACTOR IN GOOD ORDER $50.00 OR BEST OFFER.

HONEY VATS

2 SQUARE AND 1 ROUND, APPROX: 1 TON CAPACITY, AND 1 ROUND ¾ TON CAPACITY HONEY VATS ALL IN SOUND ORDER $5.00 EACH ONO.

Owner purchased larger equipment.

ELTHAM APIARIES P.O. Box 128 ELTHAM,
TARANAKI.

HONEY PACKING EQUIPMENT

HONEY MELTER: Water-bath type. Size—(outside measurements) Length 11ft 4in. Width 3ft 3in. Height (including timber stand) 3ft. Capacity - 36 x 60 lb tins or equivalent 5 gal. drums. Melting Time - 36 hours. Construction - Flat galv. iron bath, timber and pinex softboard insulation. Fittings - Electricity: 3 x 1000w elements & thermostat. Water: ballcock, polythene piping & outlet tap. Price $50.00.

STARTER SOFTENER: Water-bath type. Size 16" x 16" x 21" high. Capacity - 1 x 60 lb tin. Construction - drum positioned in insulated box. Fittings - 1 x 1000w element, thermostat & outlet tap. Softening time @ 85° setting 36 hours. Price $15.00.

GEAR PUMP: ¾" brand new. Price $15.00.

WHEELER & COMPANY
Phone 37, OTOROHANGA.

The

National Beekeepers' Association

(For the advancement of the Beekeeping Industry in New Zealand)

'Better Beekeeping—Better Marketing'

SUBSCRIPTIONS

0 to 20 hives	$2.00	1001 to 1100 hives	$22.00
21 to 200 hives	$4.00	1101 to 1200 hives	$24.00
201 to 300 hives	$6.00	1201 to 1300 hives	$26.00
301 to 400 hives	$8.00	1301 to 1400 hives	$28.00
401 to 500 hives	$10.00	1401 to 1500 hives	$30.00
501 to 600 hives	$12.00	1501 to 1600 hives	$32.00
601 to 700 hives	$14.00	1601 to 1700 hives	$34.00
701 to 800 hives	$16.00	1701 to 1800 hives	$36.00
801 to 900 hives	$18.00	1801 to 1900 hives	$38.00
901 to 1000 hives	$20.00	1901 to 2000 hives	$40.00

JOIN YOUR NEAREST BRANCH
AND DERIVE FULL BENEFITS

APIARY INSURANCE
(Public Risk Indemnity)
Free Cover for Association Members

All financial members of the Association are automatically indemnified against Public Risk claims up to $10,000 in any occurrence of injury or death to persons or livestock directly attributable to the action of the members' bees and arising from his or her negligence as the beekeeper. The cover is underwritten by the New Zealand Insurance Company Ltd and the premium met by the Association from consolidated funds.

THE N.Z. BEEKEEPER

This Journal is issued to all members of the National Beekeepers' Association and direct subscribers.

Literary contributions and advertisements must be in the hands of the Editor, Mr L. W. Goss, P.O. Box 3561, Auckland, not later than the 25th of the month preceding publication.

Nome-de-plume letters must be signed by the writer and address given, not necessarily for publication, but as proof of good faith. Letters accepted for publication do not necessarily express the views of the Editor.

ADVERTISEMENT RATES

Quarter Page	$4.50	Per Inch	$1.25
Half Page	$8.25	Min. Charge	65c.
Full Page	$15.00	for each insertion.	

Front Page Story

PICTURED on the front cover this month are two stalwarts of the Department of Agriculture who have made valuable contributions to beekeeping in New Zealand by their practical work and research into a wide variety of problems common to the industry.

Both were speakers and contributed their knowledge at the recent North Island Beekeeping Seminar held at Ruakura, Hamilton. On the left is Ivor Forster, whose paper SWARMING AND ITS CONTROL is published in this issue, and at right, Vince Cook whose subject PLANNING BEEKEEPING PROFITS will be published in a later number. Both officers of the Department of Agriculture are stationed at Oamaru: Ivor is attached to the Wallaceville Animal Research Centre as Technical Officer, and Vince is Apiary Instructor.

Executive of the National Beekeepers' Association recently paid tribute to the assistance given to the industry by these two officers in their work and for their good public relations for the industry with radio, T.V. and press liaison.

R. S. (Bob) Walsh the Apiculturist at Auckland, G. M. Walton, Apiculture Advisory Office at Palmerston North, and Colin Rope, Honey Grader at the HMA, were other officers of the Department of Agriculture to contribute to the Seminar's success, and the industry is appreciative to these men for their work in both their official and private capacities.