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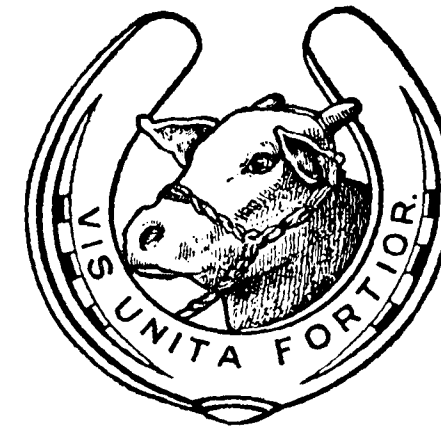
No. 4

THE INDIAN VETERINARY JOURNAL

[THE JOURNAL OF THE ALL-INDIA VETERINARY ASSOCIATION]

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The Indian Veterinary Journal

(The Journal of the All-India Veterinary Association)

Vol. XXVI

JANUARY 1950

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Message to the Nation

By

Dr. RAJENDRA PRASAD,

FIRST PRESIDENT OF THE INDIAN REPUBLIC

on the occasion of the inauguration of the Republic of India

"We must re-dedicate ourselves on this day to the peaceful but sure realisation of the dream that had inspired the Father of our nation and the other captains and soldiers of our freedom struggle, the dream of establishing a classless, co-operative, free and happy society in this country. We must remember that this is more a day of dedication than of rejoicing—dedication to the glorious task of making the peasants and workers, the toilers and the thinkers fully free, happy and cultured."

This special message to his countrymen was given by India's first President, Dr. Rajendra Prasad on the occasion of the inauguration of the Republic of India.

"We must not forget even for a moment," added Dr. Rajendra Prasad, "that ours is a tremendous responsibility, the responsibility of carrying into each cottage and home of this country the message of cheer and culture, of freedom and prosperity, of life and light. We must remember that our ancestors are wishfully looking to us for the completion of the mission which history and Providence are placing on our shoulders on this historic day. With firm resolve, with clear vision, with steady steps, we must march forward to the fulfilment of this glorious mission. No one, whether aged or young, man or woman, believer or non-believer, must fail or falter or fall away from the line. Our people need the contribution of each and all the experience of the aged and the energy of the youth, the strong resolve of warriors and the tender care of the sisters. We must remember that our future is in our hands and it shall be what we make of it. We must all throw ourselves into unceasing and incessant creative activity on the farms and the factories, in the schoolrooms and the laboratories, in the Council Chambers and the administrative offices. Let not a minute, nay, even a second, be wasted in idle patter or destructive action and God willing, ours shall be a country full of milk and honey in the near future."

Continuing, Dr. Rajendra Prasad said: "It was on January 26, 1930, that we had met under the auspices of the Indian National Congress in the villages and towns of this great country to pledge ourselves to the realisation of complete independence for our people. Twenty years of history and adventure, of struggle and success have passed since that day and we gather again in the cities and villages to celebrate the fulfilment of that solemn pledge and the realisation of that glorious dream."

He added, "India to-day becomes a sovereign democratic Republic. On this solemn day, it is our duty to render thanks to beneficent Providence which has guided our steps and lighted our path in this adventure of freedom. We must respectfully remember the Father of the Nation, our beloved Bapu, who, by his magic *mantram*, inspired a new life and kindled a new hope in our weary limbs and despondent breasts and who, gathering the scattered fragments of our people into a spiritual unity, led them forward from the dark valley of slavery to this glorious temple of freedom."

Paying tribute to the martyrs of freedom, Dr. Rajendra Prasad said, "We owe homage to the many men and women, old and young, who fell martyrs in our struggle for freedom."

Prime Minister Nehru's Message to the Nation

on the occasion of the inauguration of the Indian Republic

"Events crowd in upon us and because of this quick succession we are apt to miss their significance. Some of us give messages on each occasion exhorting people to great endeavour and even these messages become stale from repetition.

Yet, undoubtedly, the 26th day of January 1950 is a day of high significance for India and the Indian people. It does mean the consummation of one important phase of our national struggle. That journey is over to give place to another and perhaps more arduous journey. A pledge is fulfilled and every fulfilment of a pledge gives satisfaction and strength for future endeavour.

"There is a peculiar appropriateness about this 26th of January, for this day links up the past with the present, and this present is seen to grow out of that past. Twenty years ago, we took the first pledge of independence. During these 20 years, we have known struggle and conflict and failure and achievement. The man who led us through apparent failure to achievement is no more with us, but the fruit of his labours is ours. What we do with this fruit depends upon ourselves. The progress of a nation is dependent upon many factors, the basic factors are those on which Gandhiji laid stress throughout his career—high character, integrity of mind and purpose, a spirit of tolerance and co-operation and hard work. I can only suggest to our people that we should found our Republican freedom on these basic characteristics and shed fear and hatred from our minds and think always of the betterment of the millions of our people.

"We are fortunate to witness this emergence of the Republic of India and our successors may well envy us this day, but fortune is a hostage which has to be jealously guarded by our own good work and which has a tendency to slip away if we slacken in our efforts or if we look in wrong directions. Jai Hind."

TO INDIANS ABROAD

"On this day when India becomes a sovereign democratic Republic, I send my warmest greetings to all our countrymen abroad. In the long and eventful annals of our country, this day will have a special place. A pledge taken long ago is fulfilled and every Indian, wherever he may be, has a new status as a citizen of the Republic. This brings new rights and responsibilities. To the people of all other countries, we offer our friendship on terms of equality and respect for each other's rights. In our own country, we face the future with faith and confidence. Every citizen of the Republic of India must remember that he has the dignity and prestige of his motherland in his keeping and he must be true to that trust."

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(The Journal of The All-India Veterinary Association)

Vol. XXVI

JANUARY, 1950

No. 4

General Articles

Panting in Cattle — A Sequel to Foot-and-Mouth Disease

1. Experimental Observations and Pathology*

By

F. C. MINETT, M.R.C.V.S.,

Izatnagar, India.

A general account of the condition known as "panting" in cattle, as it is seen in India, is presented in another paper.¹ There, it is pointed out, by reference to literature, that panting, although at its worst in hot countries, has been recognised in many temperate climates. There is no record of its occurrence in the United States or Australia, countries which are free from foot-and-mouth disease. Panting represents a more or less permanent failure of the heat-regulating mechanism, in consequence of which dyspnea, often sufficient to cause distress, is one of the most prominent symptoms. Affected cattle also develop a long, rough coat, seek the shade, and lie down in pools of water. Cattle of European blood lines living in tropical countries are by far the worst sufferers.

Literature

With regard to the pathology of the condition, Nai² described lesions in the pituitary glands of 'hairy cows' (hypertrichosis following foot-and-mouth disease). These consisted of multiple foci of lymphoid cells, mainly in the anterior lobe, and were regarded as specific; hence, a point to be considered in the pathogenesis of the condition is the known cutaneous trophism of pituitary hormones. In a later article, however, Nai³ states that the lesions in the pituitary were found in cattle after foot-and-mouth disease, whether affected with hypertrichosis or not. Similar lesions were present in the adrenal and pancreas.

* Reprinted from the American Journal of Veterinary Research, Vol. X, No. 34.

Experimental

With the co-operation of the director of military farms and of the director of Veterinary Services in India, a number of typical panthers and control cows were placed at our disposal for detailed examination. This involved (a) clinical study, including observations on body temperature, respiration and pulse rates, body weight and measurements, water intake, examination of the blood; (b) biochemical estimations of certain blood and urine constituents; (c) postmortem examination; and (d) chemotherapy. The complete study, however, was not carried out in the case of every animal in the experimental group.

TABLE 1

Body Weights of Experimental Animals Recorded before First Watering and Feeding of the Day.

Cow	Period of observation (months)	Body weight (lb)		
		Range	Mean	Before death
1	10½	768—876	810	812
2	12½	724—896	802	760
3	23	668—864	752	668
4	13	970—1116	1061	970
5	23	744—888	832	812
13	6	544—684	614	544
6	13	992—1120	1055	992
11	20	948—1108	1030	980
10	20	854—1088*	937	1088

* Excluding pregnant period.

Series 1.—Seven panthers and 3 controls were available during 1942 and 1943. Five panthers (1 to 5) and 1 control (6) arrived in January, 1942; 2 controls (10 and 11) in April, 1942; and 2 panthers (12 and 13) arrived in May, 1943. Brief histories of the experimental animals follow.

Cow 1, a Holstein-Friesian $\frac{3}{4}$, Ayrshire $\frac{1}{4}$, Sahiwal $\frac{1}{4}$, $\frac{3}{4}$ grade, was born February, 1937. It had 2 calves, the last in September, 1941, and at the time of this study was dry. Its mother was a panther. There was no record of foot-and-mouth disease. The animal was thin with a rough coat. It died in October, 1942.

Cow 2, grade $\frac{7}{8}$, was born January, 1937. It had 2 calves, the last in January, 1941, and at the time of this study was dry. Its mother was a panther. There was a record of foot-and-mouth disease in 1939, since which time its feet had remained very sore, with persisting secondary infections near the hind feet. Its condition was poor, and it was destroyed January, 1943.

Cow 3, a Holstein-Friesian-Sindhi, $\frac{3}{4}$ grade, was born February, 1939. It aborted November, 1941, and was dry at the time of this study. Its mother was a panther. Piroplasmosis developed August, 1941, and it was destroyed November, 1943.

Cow 4, Holstein-Friesian-Sahiwal, $\frac{3}{4}$ grade, was born November, 1930. It had 7 calves, the last in October, 1940; at the time of this study, it was dry. Foot-and-mouth disease was recorded in November, 1940. Piroplasmosis developed before the last calving. The animal had been a panther for eight years and was thin with a rough coat. It was destroyed February, 1943.

Cow 5, a Holstein-Friesian-Hariana, 13/16 grade, was born April, 1937. It had 1 calf in February, 1941, and was dry at the time of this study. Its mother was a panther. No history of foot-and-mouth disease was recorded. The animal was said to have panting from an early age. It was thin with a rough coat and was destroyed December, 1943.

Cow 12, a Holstein-Friesian-Hariana, 7/8 grade, was born April, 1939. It had 1 calf in August, 1942, and died of theileriasis in June, 1943.

Cow 13, a 7/8 grade, was born January, 1940; it had 1 calf in October, 1942. It was destroyed when moribund, October, 1943.

Cow 6, a Holstein-Friesian-Sindhi, $\frac{3}{4}$ grade, was born September, 1931. It had 6 calves, the last in September, 1940. It was destroyed in January, 1943.

Cow 10, a Holstein-Friesian-Sindhi, $\frac{1}{2}$ grade, was born October, 1935. It had 2 calves, the last in August, 1942. The second calf, a male, was a panther when 2 years old. Cow 10 was destroyed in February, 1946.

Cow 11, a Holstein-Friesian-Hariana, $\frac{1}{2}$ grade, was born June, 1930. Its last calving was in March, 1941. At the time of this study, the animal was dry. It was destroyed December, 1943.

General Observations:—Experimental animals during their stay at Izatnagar, were housed usually in a shed, the sides of which were open at all times, except at night during very cold weather. For one month from May 25, 1943, they were moved to cooler metabolism stalls. At all times they were fed individually, twice daily, a concentrate mixture (totalling about 3½ lb. per day) composed of wheat bran, gram husk, gram *chuni*, groundnut, and rape cake, with the addition of 1 oz. of minerals. A bulk ration of grass hay, oat hay, wheat chaff, green fodder, or silage was fed according to availability. Although the panting was sometimes so bad as to cause distress, no substantial loss of appetite was apparent. All the animals, other than controls, were definite panthers, cows 3 and 5 being the most serious.

TABLE 2
Body Measurements of Experimental Animals in Inches.

Cow No.	Height	Girth	Height to girth ratio.
4	54.0	76.5	0.71
13	48.5	66.5	0.73
5	50.625	68.25	0.74
3	51.75	67.50	0.77
2	53.5	68.5	0.78
10	49.75	70.25	0.71
11	52.0	71.75	0.72
6	54.0	71.0	0.74

The monsoon season was even more trying than the hot pre-monsoon days. As the heat increased, there was often excessive salivation and lacrimation and some watery nasal discharge as the animals stood in the shed, and this was noted occasionally in controls 6 and 10. Control 11 was little disturbed, even on the hottest days. All animals sweated normally at the muzzle. Exercise in the heat produced obvious signs of overheating, and much urging was required to keep the animals moving. Panther 3 was inclined to lie down in the shed, breathed rapidly in the heat, sometimes

TABLE 3
Record, in Pounds, of Water Consumed by Experimental Animals.

Date	Panthers	2	3	4	5	Mean Consumption for period	Controls	Mean Consumption for period
March 17	128.75	69.75	63.5	137.0	124.0	95.28	71.5	—
24	129.75	97.25	98.75	70.0	99.5		98.25	—
31	84.25	105.5	86.5	56.25	78.5		87.25	—
April 7	148.5	85.0	91.0	65.0	73.5	92.60	88.5	—
June 11	109.5	85.5	132.25	78.5	78.5	94.75	38.75	96.75
19	148.0	88.75	132.5	92.75	91.25		122.5	94.5
30	79.0	83.5	72.5	69.5	76.25		71.5	60.75
Aug. 12	96.0	66.0	81.5	62.25	65.5	84.72	70.5	72.5
19	70.5	70.5	73.5	53.5	61.0		73.0	78.25
28	111.0	162.5	107.0	87.0	103.0		116.0	122.0
Mean	110.525	91.425	94.200	77.175	85.100		83.775	87.46
Grand mean		91.685					85.16	

panting like a dog with extruded tongue. From May to September, 1943, owing to the animal's state of distress, it was kept in a cool building except on observation days when it was moved to the shed two hours before the work was started. On three occasions in 1943, the amount of fluid, in the form of saliva, lost by cow 3 was measured. The amounts were:

May 18, 3:00 to 4:00 p.m., 1,460 cc., May 22, 9:00 a.m. to 3:00 p.m., 2,540 cc.; June 28, 1:00 to 3:00 p.m., 1,480 c.c.

Panther 1, during the month before its death, had several fainting fits and on each occasion was prostrate for an hour or more. It had great difficulty in rising, was very weak, but continued to feed till death. Panthers 5 and 13 contracted foot-and-mouth disease in July, 1943.

Body Weight:— Weighings were taken before the first watering and feeding of the day, ten times during the month of arrival to fix the weight as accurately as possible, thereafter two or three times a month (see table 1).

The body weights of the panthers were low when they were received, probably due to the journey. Within two months they showed a decided increase but lost again in the hot weather. However, the controls showed a similar tendency. Beginning in May, 1942, panther 3 showed a more pronounced loss in weight, reaching a low point in August; it revived in winter to reach a peak in April. From then, there was a sharp decline persisting until death.

Body Measurements:—Measurements (in inches) of height to withers and chest girth at 4 in. behind elbow were carefully taken on two occasions in 1943. The height to girth ratio perhaps gives an idea of chest capacity, *i.e.*, the lower the ratio the relatively better is the chest developed. The figures are few and little importance can be attached to them, but as they stand they suggest that panthers may be inferior to normal animals in chest capacity. Measurement of cows 2, 4, 6, and 13 was made once only (table 2).

Body Temperature, Respiration, and Pulse Rates:— At various periods during 1942, to study the effect of the cool, the hot, and the monsoon seasons, observations were made on panthers 1 to 5, and controls 6, 10, and 11. The temperature, respiration, and pulse rates at rest were recorded at 9:00 or 10:00 a.m. At 2:00 p.m., the animals were exercised on level ground, the temperature, respiration and pulse rates being again recorded immediately on return to the shed. In the cold season, they were exercised for one hour and in the warm season for thirty minutes or even less. During the monsoon season, rainless days were selected for the observations. The respiration rate was taken over two minutes and the mean value for one minute recorded. A second observer recorded the pulse

rate for one minute; after that, the temperature was noted. The mean values of these observations are given in tables 5 to 7. Mean air temperatures at 7:00 a.m. and 4:00 p.m. for the periods are also shown in table 5.

During the hot and monsoon season of 1943, similar observations were made on panthers 3, 5, and 13 and controls 10 and 11, at rest only, at 2:00 p.m. Results are shown in table 8.

In connection with these tables, two points are to be noted: (1) Cow 10 was obviously not a satisfactory control, since, in both years, the values for temperature, respiration and pulse rates were not only definitely higher than the other 2 controls, 6 and 11, but also higher than some of the panthers. Nevertheless, cow 10 did not have the appearance of a panther and was considered a normal animal by the farm authorities. It had a smooth coat, showed no distress in the heat; its blood values were in the normal range and, at the time of destruction, the animal was in good condition. It appeared to be an example of the grade animal which will pant in the heat without being a panther in the accepted sense. (2) Since cow 3 was a very bad case, giving far higher values than the others, figures for it have not been included in the averages.

Respiration.—From tables 5 to 8 and figure 6, the following points may be noted. (1) As expected, resting respiration rates are much higher in warm season than in the cold. In the case of panthers, the rates were also higher at 2:00 p.m. than at 10:00 a.m. (2) Comparison of the group averages of respiration rates at rest for normal controls 6 and 11 and for panthers 1, 2, 4, and 5 shows that the rates for panthers are higher than those of the controls. The rates for panther 3 are higher still, while control 10 is intermediate but higher than panther 1, etc. (3) The respiration rate at rest becomes relatively higher in panthers than in normal controls as the hot-dry season is entered, and the difference is even more exaggerated in the monsoon. The worse the panther, the greater the curves diverge. (4) Comparison of the curves on the left and right sides of figure 6 shows that, after exercise, also, the rise in respiration rate is relatively much greater in panthers than in normal controls during the cool and hot-dry seasons, the difference being particularly marked with the bad panther, cow 3. In the monsoon season; the postexercise rate is still higher, but the actual rise due to exercise is then roughly proportional in panthers and controls. (5) Whereas at the worst season, *viz.*, the monsoon, the respiration rate of the normal controls at rest was 18 per minute; in the average panther, the rate rose to 25 and, in the bad panther, as high as 65 per minute. These are for 10.00 a.m. readings; at 2:00 p.m., at roughly comparable seasons, the respiration rate of the severe panther was over 100 per minute (table 8).

Pulse.—Much the same conditions are true of pulse rate as of respiration rate (table 2). Whereas, in the normal controls during the

monsoon season the mean pulse rate at rest is about 42 per minute, in the average panthers, it is about 49. In panther 3, the rate at this time was about 66, reaching 83 after exercise.

TABLE 4

Comparison of Weights, in Grams, of Organs of Experimental Animals.

Cow	Body wt.	Approximate age at death (yr.)	Heart	Thyroid	Adrenal	Pituitary
20	564	2½	1281 (0.50)*	18.8 (0.0073)	12.60 (0.0049)	3.25 (0.0013)
17	752	5	1235 (0.36)	12.6 (0.0037)	18.20 (0.0053)	6.0 (0.0018)
23	784	5	1100 (0.31)	14.7 (0.0041)	17.35 (0.0049)	
3	668	5	1130 (0.37)	11.7 (0.0039)	12.4 (0.0041)	
2	760	6	1680 (0.49)			
5	812	6½	1270 (0.34)	16.4 (0.0045)	13.0 (0.0035)	
21	824	7	1276 (0.34)	16.65 (0.0045)	19.27 (0.0052)	
14	612	8	1045 (0.33)	8.47 (0.0031)	15.52 (0.0056)	
4	970	12	2030 (0.46)	22.9 (0.0052)	20.4 (0.0046)	
15	825	15	1559 (0.42)	33.0 (0.0088)	27.70 (0.0074)	
Controls						
10	1088	10	1792 (0.36)	23.4 (0.0047)	24.02 (0.0049)	
6	992	11	2150 (0.48)	50.6 (0.0112)		
11	980	13	1890 (0.42)	22.4 (0.0050)	19.4 (0.0044)	5.7 (0.0013)

*Figures in brackets show percentage of mean body weight.

Temperature.—From table 7, it is seen that, at rest during the cool and the hot-dry weather, there was no difference in the mean temperatures for panthers and controls, while in the monsoon, the mean temperature of the average panthers was 0.5 F. higher and with panther 3, 1.9 F. higher. The mean, maximum temperature at rest, 103.3 F., was noted in panther 3 during the monsoon. The rise in temperature due to exercise was higher at all seasons in the panthers than in the controls, and there was little difference in this respect between the average panther, and the worst panther, cow 3. The rises in temperature in control 10 were also considerable, and the mean temperature reached by this animal in the monsoon was equal to that of panther 3, just over 105 F.

Return to Normal after Exercise.—On a number of occasions, after an hour's exercise in the sun, the temperature, pulse, and respiration were taken at fifteen-minute intervals to note the time required for values to return to normal. Naturally, this interval depends on the air temperature during cooling, hence on the time of day the exercise is undertaken. The work was carried out during March to September, with shade temperatures varying from 66 to 90 F. It was not easy to get accurate recordings of the time required for values to reach the normal level due to variation of air temperature during the observations, due to difficulty of deciding just when normality was reached, and, sometimes, to failure of the temperature, pulse, and respiration to reach normal within two or three hours. The results

may be expressed in general terms by saying that, in controls, the respirations reached normal in about thirty minutes; in medium panthers, in forty-five minutes; while, with panter 3, the rate usually remained above normal for more than two hours. The pulse rate of controls and medium panthers was found to return to normal after about forty minutes and, in the severe panter, after fifty to fifty-five minutes. The temperature of the controls and medium panthers returned to normal in about fifty minutes, while in the severe panter normality was not reached before at least one and one-half hours.

Water Intake.—On ten days during 1942, the amount of water (in pounds) consumed between 7:00 a.m. to 7:00 p.m. was measured. Water was continually before the animals, and the amount drunk was measured hourly. Most of the water was taken between 7:00 and 8:00 a.m. and 4:00 and 5:00 p.m.

TABLE 5

Respiration Rate of Panthers and Controls at Rest and After Exercise, 1942.

Cow No.	No. of observations			Mean			Group mean			Rise due to exercise		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
At rest.												
1	15	18	17	10.2	15.4	29.4						
2	25	18	16	9.2	19.4	25.5						
4	21	18	17	9.3	19.5	19.7	9.8	20.6	25.3			
5	24	18	17	10.8	28.2	25.6						
3	25	18	17	16.2	44.3	65.5						
6	25	18	17	8.8	17.3	17.0						
11	10	—	17	7.4	—	18.8	8.4	17.3	18.0			
10	10	—	12	15.7	—	42.0						
After exercise.												
1	14	17	13	24.3	39	65						
2	23	17	15	41.1	64.5	75						
4	23	17	15	30	53.5	62.1	33.1	55.4	69.1	23.3	34.8	43.8
5	23	17	15	38.5	68	74						
3	23	16	15	55.5	104	114.3				39.3	59.7	48.8
6	23	17	15	19.3	38.1	60.5						
11	9	—	15	12.6	—	64	17.4	38.2	62.3	9.0	29.9	44.3
10	9	—	11	35.5	—	70.8				19.8	—	28.8
Mean air temperature (F) 70.3- 89.1- 84.7- 77.3 98.9 87.9												

*Numbers in parentheses indicate periods as follows: Period 1= Jan., Feb., Dec.; period 2= March, Apr.; period 3= Aug., Sept., with cow 10, gap of twenty-six days left in period 3 over calving period.

Unfortunately, only 1 control was available during the full period. The results shown below, although not striking, suggest that panthers consume more water than normal cattle, a finding which is amplified by Mullick's work⁷ and which corresponds to the increased respiration rate and the greater output of saliva and urine shown by diseased animals (table 3).

Examination of Blood and Urine.—Details are given in Mullick's study.⁷ It may be mentioned here that panthers are anemic, have a lower alkali reserve than controls and higher values for blood lactic acid and inorganic phosphorus. Panthers show a higher excretion of relatively low specific gravity and a lower output of urinary nitrogen and chlorine. They consume less food and have lower food utilization than control cattle.

Series 2.—Six panthers were available during 1944 and 1945, 3 being European crosses received in April, 1944, and 3 Harianas from the Institute dairy, put under observation in July, 1944. (Data for the Harianas are omitted from the paper by Dr. Mullick.)

Brief histories of the experimental animals follow:

Cow 15, a Holstein-Friesian-Hariana, 5/8 grade, was in fair condition; its coat was not noticeably rough. Born December, 1929, it had ten calves, the last in July, 1942. It was destroyed in November, 1944.

Cow 17, a Holstein-Friesian-Sindhi grade, not in good condition, with a rough coat, was born February, 1940. It had two calves, the last in February, 1944, and was destroyed in December, 1944.

Cow 20, a Holstein-Friesian-Hariana, 7/8 grade, in poor condition, with a rather rough coat, was born August, 1942, and was destroyed, January, 1945.

Cow 14, a Hariana was born January, 1938. It was very thin with a rough coat. It had 4 calves, the last on July 29, 1944. Three of the 4 calves died when less than 2 months old. The cow was destroyed in January, 1946.

Cow 21, a Hariana, dark grey in colour, was born November, 1937. It had 4 calves, the last in June, 1944. The first calf, a female, was said to have developed panting. The second and third calves died when 3 to 6 months old. The cow was destroyed in February, 1945.

Cow 23, a Hariana, dark grey in colour, in good condition, was born September, 1939. It had 3 calves, the last in May, 1944. The first calf died when 4 months old. The cow was destroyed in February, 1945.

The 3 crossbreds were used mainly for bio-chemical investigation, but sufficient observation was made on all 6 to establish their clinical status in respect to panting. For example, cows 15, 17, and 20, on April 18, 1944,

when the dry bulb temperature was 96 F. gave respiration rates at rest of 55, 62, and 59 per minute, and 120, 72, and 105 per minute, respectively, after a half-hour's walking. Cows 21 and 23, on Sept. 5, 6, and 7, 1944, when dry and wet bulb temperatures were around 90 and 82 F., gave mean respiration rates at rest of 100 and 82, respectively. Cow 14, on three days, in July, 1944, when dry and wet bulb temperatures were about 91 and 83 F., gave at rest a mean respiration rate of 69.

Pathology.—Except in the case of panter 1, which died unexpectedly postmortems were conducted immediately after destroying the animals. Particular attention was paid to certain of the endocrine glands. Since the state of these glands, in particular the thyroid, is so much influenced by outside factors, it was arranged that the animals be slaughtered during the cool season and at a time when they were not pregnant or lactating. The materials were fixed in formalin-hematein-and eosin-stained sections prepared from all, or most, of the following: heart muscle,

TABLE 6

Pulse Rate of Panters and Controls at Rest and after Exercise, 1942

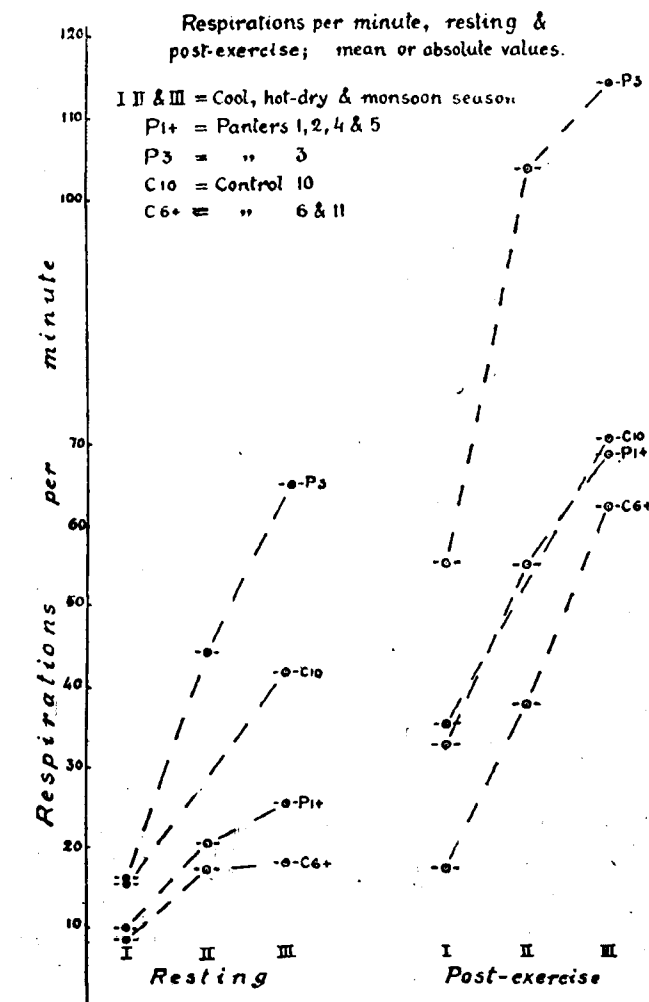
Cow No.	No. of observations			Mean			Group means			Rise due to exercise		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
At rest												
1	18	18	17	40.8	48	54						
2	28	18	17	42	46.2	46						
4	26	18	17	44.1	46.6	46.8	42.5	48	49.3			
5	27	18	17	43.7	51.2	50.4						
3	28	18	17	45.7	51.4	66.5						
6	27	18	17	38.4	41.5	42.8						
11	10	..	17	39.7	..	40.5	38.8	41.6	41.6			
10	10	..	..	56.2	..	..						
After exercise												
1	14	17	13	60.6	70	72.6						
2	23	17	15	66.5	67.6	65.5						
4	23	17	15	64.4	62	67.8	64.3	67.2	68.3	21.8	19.2	19
5	23	17	15	64.4	69	68						
3	23	17	15	66	69.3	83.2				20.3	17.9	16.7
6	21	17	15	56.4	54.3	63.4						
11	9	..	15	56.6	..	65	56.5	54.3	64.1	17.7	12.8	22.5
10	9	..	81	69.5	..	81				13.3	..	..

*Numbers in parentheses indicate periods.

liver, spleen, kidney, pituitary, thyroid and adrenal. Smears from the ileocecal valve were negative for Johne's bacilli. The only gross abnormalities were as follows: Panter 2 had some pleural adhesions. Panter 4 had some uniformly distributed pericardial adhesions; joint cavities were blue. Panter 5 showed epiphysis of femur containing yellow

marrow, and a large cyst in one kidney. Panter 3 showed poor body condition and epiphysis of femur containing yellow marrow. In the thyroid of panter 15 was a very large cyst in one lobe and fairly large cysts in the other lobe. In panter 23, there was slight pyelonephritis of the

FIG 6



right kidney. Control 10 had many cysts in the thyroid. There was also a cyst in the pituitary, apparently in connection with the posterior lobe. Weights of the various organs (in Gm) are recorded in table 4.

It may be noted that Dey, Krishnan, and Giriraj³ found the thyroid glands of South Indian cattle to have an average weight of 8 to 12 Gm. More than 2,000 such cattle were examined, and their average weight would be 400 to 500 lb. (personal communication), so that the thyroids were 0.004 to 0.005 per cent of the mean body weight, figures close to those shown in table 4.

Thyroid Gland.—In a general way, in panthers, the outstanding features are reduction in size of the gland and diminished storage of colloid. In the normal resting thyroid of the adult cow, the vesicles, other than those near the periphery, are large, distended, with deeply stained colloid, and lined with rather flattened epithelium (fig. 1 and 2). In most of the panthers, many of the vesicles forming the central bulk of the gland are small; the lining cells tend to be more cuboidal, and the contained colloid is pale-staining or not detectable. Incidentally, none of the animals was in milk at the time of death. It seems that the thyroid of the panther is too active for the animal's needs. This is in agreement with Mullick's observation that panthers give out more heat than controls. The reduced volume of the gland is probably, in part, an adaptation to the lowered heat production requirements. When panting animals grow old, their demands for thyroid secretion diminish in the normal way, so that the glands again enlarge as a result of colloid storage.

In control 10, most of the vesicles were large, but the colloid was not very deeply stained, and the lining epithelium tended to be cuboidal. The thyroid of panther 15, a 15-year-old cow, showed very little abnormality, the vesicles being of normal size but filled with rather pale colloid. In panthers 5, 14, 21, 23, 4, 20, and 3, a proportion of the vesicles were of more or less normal size, but many were small. In panthers 13 and 17, a high proportion of the vesicles were very small and contained pale colloid (fig. 3 and 4). In panther 2 (fig. 5), there were few large vesicles and these were filled with fairly well stained colloid; practically all the vesicles were small and their lumen contained, not colloid, but a few scattered cells.*

*After this study of the thyroid was written, a paper by Abbott and Prendergast⁴ was drawn to the author's attention through the kindness of Dr. B. Mukherji, Calcutta. These workers describe the histology of thyroids from various species of animals of varying ages. They emphasize that the thyroid gland undergoes definite changes as age increases. The thyroids of younger animals are characterized by small acini and little colloid, with a tendency to hyperplasia, physiologic in nature. With older animals, the acini become larger, and the colloid is relatively increased. In still older animals, colloid is further increased, and the cells tend to become flattened. These changes are, of course, due to the varying activity of the thyroid at different ages, the glands of younger animals being most active. Unfortunately, the control cattle studied by the author were older than the panthers. Nevertheless, one may probably compare the thyroids of panthers 21, 14, and 4 (aged 7, 8, and 12 years), in which many acini were described as small, with those of controls 10, 6, and 11 (aged 10, 11, and 13 years), in which the vesicles were large and had an appearance not unlike that in colloid goiter. It still seems correct, therefore, even on histologic grounds, to say that the thyroids of panthers are abnormally active. It may be noted, that panther 15, which was 15 years old, had large thyroid vesicles.

Panting in Cattle — A Sequel to Foot-and-Mouth Disease

1. Experimental Observations and Pathology



Fig. 1—Thyroid of control 10. x 30.



Fig. 2—Thyroid of control 11. x 30.

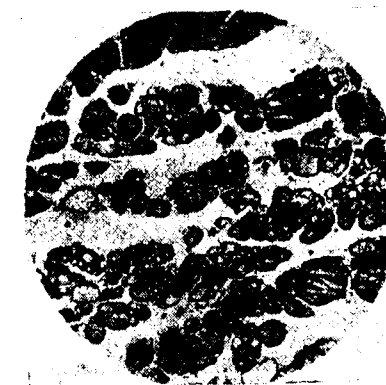


Fig. 3—Thyroid of panther 13. x 30.

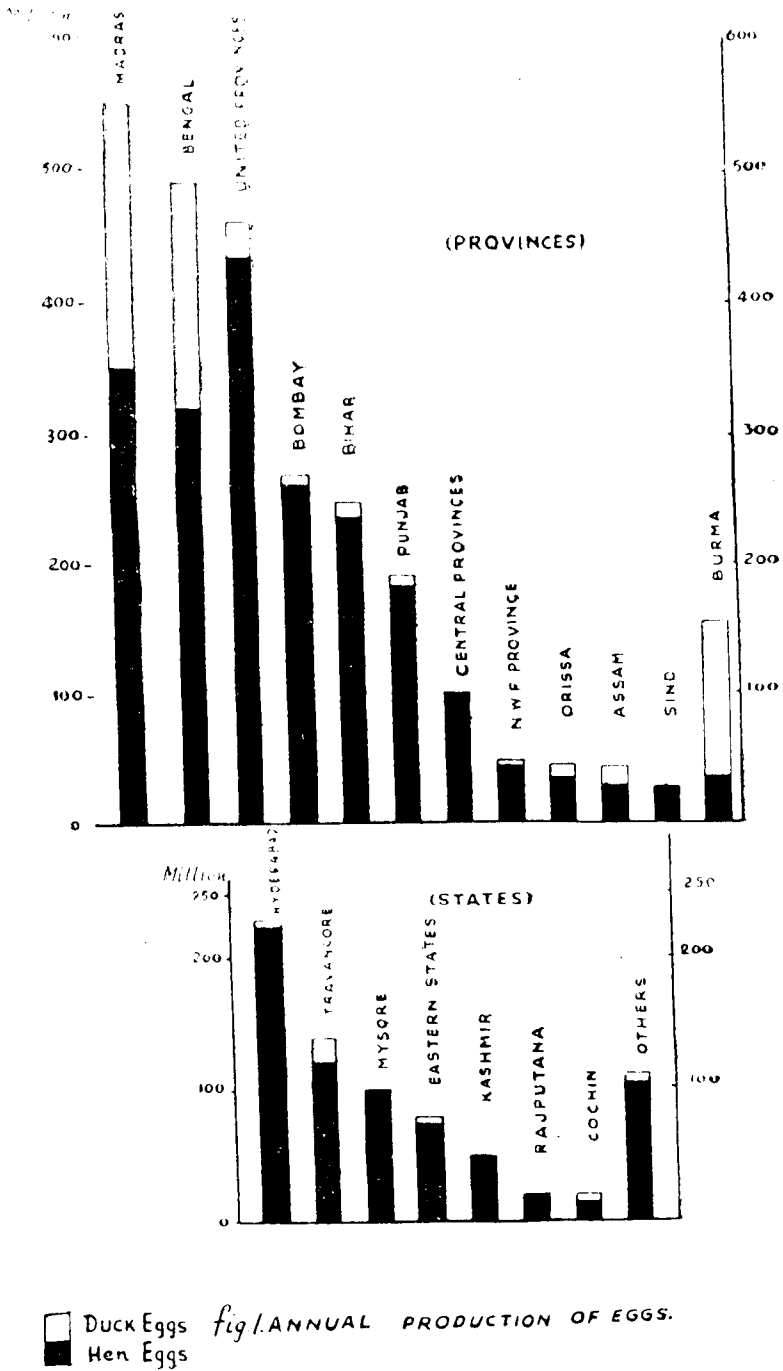


Fig. 4—Thyroid of panther 17. x 30.



Fig. 5—Thyroid of panther 2. x 30.

POULTRY INDUSTRY IN INDIA.



PANTING IN CATTLE. 1. EXPERIMENTAL OBSERVATIONS 277

Adrenal Glands.—As a rule, in sections stained by hematein and eosin, no obvious changes were seen. In the zona fasciculata of panter 13, there were a few hemorrhages and some collections of lymphoid cells (deeply staining nuclei); in that of panter 4, there were foci of hyaline degeneration (negative for amyloid).

Pituitary Gland.—In hematein-and eosin-stained sections no abnormalities could be detected in any part of the gland, except in control cow 10. The anterior pituitary of this animal was strongly congested, and in its substance were a number of minutcysts, some of which contained colloidal

TABLE 7

Body Temperatures of Panters and Controls at Rest and after Exercise, 1942

Cow No.	No. of observations			Mean			Group means			Rise due to exercise		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
At rest												
1	14	17	15	100.7	100.9	102.3						
2	23	17	15	101.0	101.1	101.9						
4	23	17	15	100.6	100.9	101.4	100.7	101.1	101.9			
5	23	17	15	100.6	101.6	101.9						
3	23	16	15	100.9	102.1	103.3						
6	23	17	15	101.0	101.0	101.4						
11	9	..	15	100.16	..	101.4	100.9	101.0	101.4			
10	9	..	11	100.4	..	102.5						
Mean air temperature (F).												
	50-56.5	61.3-73.0	78.4-80.2									
After exercise												
1	14	17	13	102.4	102.0	104.1						
2	23	17	15	102.9	102.2	103.4						
4	23	17	15	102.1	101.8	102.7	102.5	102.2	103.5	1.8	1.1	1.6
5	23	17	15	102.3	102.9	103.7						
3	23	16	15	102.5	103.6	105.2				1.6	1.5	1.9
6	23	17	15	102.1	101.6	102.8						
11	9	..	15	102.1	..	103.1	102.1	101.6	102.9	1.2	0.6	1.5
10	9	..	11	102.2	..	105.1				1.8	..	2.6

*Numbers in parentheses indicate periods.

material. One cyst as large as a pea was also observed, which probably communicated with the cleft. All sections of pituitary were specially searched for collections of lymphoid cells, such as have been described by Nai, but they were not seen.

Heart Muscle, Liver, Kidney, Spleen, Parathyroid.—The heart muscle, liver, and kidney showed no abnormalities except that the heart muscle of practically all the animals contained sarcocysts. The parathyroids

could not always be found but in panter 4 and control 11, these organs were normal. The spleen of 3 panthers showed a large amount of blood pigment (Prussian blue reaction), but control 6 also showed a good deal.

Discussion

The relationship between panting and foot-and-mouth disease was discussed in the first paper¹. The relationship is not always obvious: (a) because only a proportion of cattle that have suffered from foot-and-mouth disease become panthers; (b) because cattle, like other animals, vary in their tolerance of heat. Some animals normally produce thyrotropic hormone in excess of their needs when exposed to a hot environment. Cow 10, referred to in this paper, may be a case of excessive production of thyrotropic hormone, and the fact that both pituitary and thyroid of this animal were cystic may be significant. The suggestion that panting may be due to some defect of the anterior pituitary caused by foot-and-mouth virus finds some support from the histologic observations of Nai. In the same connection, it may be noted that the presence of foot-and-mouth virus in commercially prepared pituitary extract has been reported by Galloway,² though he could not show with guinea pig pituitaries that these glands harbor the virus longer than does the circulating blood.

Though no claim can yet be made that the pathology of panting is resolved, the following hypothesis may be put forward. The panting condition is due to two factors, (a) a chronic anemia and (b) an interference with the normal working of the pituitary-thyroid-adrenal mechanism. Both changes are caused initially by the foot-and-mouth disease virus. The endocrine change may also, in part, be connected with the anemia, since inanition is known to lead to exhaustion of thyroid colloid. The anemic state, which in most cases of foot-and-mouth disease is a more or less transient affair, is maintained in panthers by the lower food intake and the lower utilization of food.¹ The increased respiration and pulse rates are necessitated by the higher respiratory exchange required to combat the anemia, as well as by the greater heat output consequent on the disordered endocrine function. As to the latter, the production of thyroxine is, relatively, in excess so far as the heat regulation is concerned but is perhaps moderate so far as the nutrition of the skin is concerned. Therapeutic trial on various lines might be one way of elucidating the phenomena.

Summary

(1) Clinical and pathologic observations were made on a number of panthers kept for several months at Izatnagar in the United Provinces of India. The severity of the complaint varied in degree from one case to another, but symptoms were usually worse in the monsoon than in the hot

-dry season. During the heat of a monsoon day, a bad panther, at rest, gave over 100 respirations per minute; even so, its body temperature might be 103 F.

TABLE 8

*Body Temperature, Respiration and Pulse Rates of
Panthers and Controls at Rest, 1943*

Cow No.	Means			Group means		
	(1)*	(2)	(3)	(1)	(2)	(3)
Body Temperature						
5	100.1	100.2	100.3	100.13	100.28	100.36
13	100.2	100.3	100.4			
3	100.45	100.5	100.4			
11	100.1	100.2	100.2			
10	100.2	100.3	100.3			
Respiration rate						
5	39.8	60.2	56	39.2	59.7	62.6
13	38.7	59.2	69.4			
3	115	102.6	73.2			
11	15.8	20	20			
10	47.2	68.8	42.8			
Pulse rate						
5	48.5	56.5	67.3	53.8	57.6	68.3
13	59.2	58.7	69.3			
3	66.8	71.6	67.5			
11	43.4	48.1	57.2			
10	53.2	51.8	59.8			
Mean air temperature (F.)						
	108	106.4	91.3			

*Numbers in parentheses indicate periods.

Period (1), May, number of observations, 10; period (2), June, number of observations, 10; period (3), Sept., number of observations, 11.

(2) Although the essential pathogenesis of panting is not yet clear, the outstanding feature pathologically is a reduction in size of the thyroid gland, with small vesicles and diminished storage of colloid. It is suggested that the symptoms are due to the thyroid being too active for the animal's needs, the reduction in size being an attempt at adaptation. A hypothesis is put forward to explain the nature of the panting condition.

(3) Panting is to be distinguished from the physiologic condition of poor heat resistance which may characterize particular breeds or individual animals.

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POULTRY INDUSTRY IN INDIA

BY

S. G. IYER, G.M.V.C.,

Officer-in-Charge, Poultry Research Section,

Indian Veterinary Research Institute, Izatnagar, U.P.

Poultry farming which was once the Cinderella of Agriculture is now one of the important livestock enterprises in India providing jobs to many enthusiasts. Compared with western countries, prior to the second world war, the industry in India was relatively undeveloped and the methods of production primitive. The production was largely in the hands of poor and illiterate families who usually kept only half a dozen laying birds, largely for their own household use. According to the Egg Marketing Report for India and Burma (1938), and the report of the Indian Livestock Statistics (1940), published by the Department of Commercial Intelligence and Statistics, India, the total number of fowls in India and various other statistical data are given in the following pages.

TABLE I.
World Fowl Population

Country.	Total fowls (in million)
U. S. A.	429
Great Britain including Northern Ireland.	72
Germany.	91
Denmark.	27
Canada.	60
Australia.	15
India.	173.2 in 1938 115.3 in 1940

With the exception of U.S.A., India should be proud of having a relatively large poultry population; the stock, however, is in a backward state.

The total number of laying hens in India as compared with certain other countries is as follows:—

TABLE II.
World Hen Population

Country.	Total Hens (in millions.)
U. S. A.	369.9
Europe.	181.8
Canada.	24.5
India.	52.2

countries which have an average annual egg production of 100 to 150 per bird. Furthermore, the eggs produced in our country are about 2/3 size of those produced in other countries where modern methods of production are practised. The appallingly low egg production must be attributed to factors such as poor quality of flocks as mentioned previously, disease epidemics, malnutrition, bad housing and general mismanagement. From these remarks it may appear that poultry keeping is not an economic proposition, but this is far from true, as the production costs in the villages are so low that most of the money received from the sale of birds and eggs constitute profits.

The demand for poultry and eggs from the Defence Services shot up during the second world war and the village flocks were depleted as attractive prices were being offered. The problem of increasing the production of the country therefore received the earnest consideration of the Government of India and 16 Military Poultry Farms were organised during the war. Prior to war, the egg prices were far too low and it was unprofitable to keep birds under commercial conditions. Now it is possible to run poultry farm on a business basis: half the number of eggs produced should be fertile and sold as such. For instance, in our own farm of the Central Government, experimental data have shown that it costs Rs.2-2-0 to maintain a Rhode pullet for a period of one year. Of this amount, feed alone represented 62 per cent of the total cost of production. Therefore, producing table eggs alone on a farm will not be a profitable concern, the average wholesale annual rate for table eggs being hardly more than Rs. 1-8-0 per dozen.

Imports of egg and egg products into India are practically negligible. No export trade in eggs of any commercial importance has developed in India. Export of eggs from India (excluding the supply to ship) is given in the following table.

TABLE VI.
Export of eggs from India

Year.	Total No. of eggs (in hundred thousand)	Total value in million rupees.
1930-31.	489	1.24
1931-32.	423	0.91
1932-33.	449	0.88
1933-34.	356	0.67
1934-35.	292	0.45
1935-36.	276	0.405
1936-37.	238	0.374

The meagre export trade is mainly due to unattractive size and quality of the bulk of eggs produced in the villages, not to mention the acute shortage of egg supplies in the country itself.

Seasonal variation of eggs.—In India, the natural period of laying and hatching for birds is usually the spring or "*Basant*" i.e. during February and March. With the help of available records on hatching seasons, a production calendar drawn out by the Marketing Department for important areas of production is represented below.—

TABLE VII.
Production Calendar

	Jan.	Feb.	Mar.	Apr.	May.	June.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
N. W. F. Province	—	—	H	—	—	—	L	—	2	—	3	—
Punjab.	2	—	—	H	—	—	3	—	L	—	—	—
United Provinces	—	—	H	—	—	L	—	—	3	—	—	2
Eastern Bengal.	3	—	—	H	—	—	L	—	—	2	—	—
Gujarat (Bombay)	—	3	H	—	—	—	—	L	—	—	2	—
Madras Presidency	2	—	—	—	L	—	—	—	—	H	—	—
Cochin & Travancore.	3	—	—	—	H	—	L	—	—	2	—	—
Burma	H	—	—	2	—	—	—	L	—	—	—	—

Reference: H=Highest peak; 2=Second highest rise; 3=Third rise;
L=Lowest of the year.

In most of the areas excepting the South, the peak of production occurs from January till about May. In Cochin and Travancore (extreme south), the peak is put back by a month or so and occurs in May corresponding with the harvesting of paddy crop. Conditions in the North improve from August onwards and the production rises gradually. Fall in production occurs during the pre-monsoon period, but ducks as a rule lay well during the monsoon. The *per capita* consumption of eggs is only 8 while the figure for western countries such as Denmark, Canada, U.S.A. is between 150-300 per head of population. As the human diet, particularly in the rice consuming areas of the South and East, is deficient in proteins, minerals and vitamins, "Produce More Egg" schemes have been launched by the Governments in the provinces and States to increase the consumption of eggs along with milk which would help to ensure an uplifting of physique and general health of the population.

Methods of production.—Poultry keeping in India is predominantly a village occupation and mostly a side-line to other pursuits. The country fowls are kept under the most primitive conditions of housing, feeding and management. Prior to the war, commercial farms and hatcheries were unknown, the chickens were entirely hatched and reared under hens. They are fed extra supplements of grains during the first few weeks but thereafter they are mainly allowed to fend for themselves. Losses in rearing from accidents, malnutrition, diseases and predatory animals such as kites, crows, dogs and jackals, are round about 50 per cent. The birds are usually housed

in dark unhygienic mud chambers, often over-crowded. Broodiness and low egg production characterise the village fowls and there is an urgent necessity for the improvement of the poultry flocks in several parts of the country. This subject is no doubt receiving the consideration of the Government of India.

Assisting the poultry farmers.—Various provincial centres have carried out certain investigations on breeds such as White Leghorn and Rhode Island Red, occasionally Minorca and cross breeds, but the amount of data at our disposal is still inadequate. Model Poultry farms have been set up in most of the provinces and States which provide training to personnel, also improved stock for dissemination to the public, but the supply of purebred cockerels is relatively small in proportion to the total fowl production. A certain amount of education on poultry matters is included in Veterinary and Agriculture Courses, while advice on poultry diseases may be obtained through the co-operation of the Veterinary Services of the country. In cases of special difficulties, the provincial Veterinary officers call upon the services of this Institute at Mukteswar or Izatnagar, U.P., which has done considerable pioneer work in poultry diseases and their control.

The necessity of having a central institute for conducting fundamental research into breeding and marketing of poultry and the control of diseases decimating the poultry population was long felt. The Royal Commission on Agriculture in India, which was appointed in 1927 under the distinguished chairmanship of Lord Linlithgow, stressed the necessity of developing poultry farming as a branch of the agricultural industry. In pursuance of the recommendations of that Royal Commission, the establishment in 1939 of a Poultry Research Section at the Indian Veterinary Research Institute, Izatnagar, was a good augury to rectify the situation. The functions of the section are scientific as well as practical. The main laboratory buildings provide facilities for research on poultry diseases, nutrition, physiology, marketing and processing of eggs and poultry. Half a mile away are two large poultry farms covering 40 acres of land having well-built brooder houses with accommodation for over 10,000 chickens under electric hovers. On these two farms, are situated about 60 laying houses providing accommodation for 4000 layers, and 64 rearing pens each capable of accommodating 100 birds. Additional area of several acres of land is available for future development. The primary function of the farm is to build up a first class stock of poultry suitable for the various parts of the country, also providing the necessary raw materials for fundamental research in the laboratories. The farm also provides opportunities for large-scale practical experiments on breeding, incubation, brooding, rearing, feeding, etc. The difficulty of hatching eggs in large numbers has been overcome by the use of two electrically-run mammoth incubators of 2668, and 4224 egg capacities. Since the inauguration of the Research

Section at the Centre, half a dozen mammoth incubators have been installed by the Military and Civil authorities in various provinces.

As the results of breeding experiments on the Institute Farm are perhaps applicable to good environmental conditions, work has been undertaken to investigate the economic value of breeds such as White Leghorn, Rhode Island Red and their crosses with indigenous stock under typical village conditions. With its up-to-date library and highly trained technical staff, the section is able to provide useful advisory information to the poultry keepers on all branches of poultry husbandry. Annually from October to April a special advanced course of training in poultry husbandry and poultry diseases is provided for twenty poultry students, the course being intended for persons who wish to take up as a career some branch of the poultry science such as teaching, research, advisory work, or investigation into poultry diseases.

Under the auspices of Grow More Food Campaign of the Government of India, schemes of developmental and research nature are being subsidised by the Indian Council of Agricultural Research and the Ministry of Agriculture, Government of India, in Central Provinces, Bombay, East Punjab, United Provinces, Baroda and certain other places. In each Province or State, there are experimental poultry farms and the foundation stocks are usually provided by the central farm at Izatnagar. The bulk of the hen population in India being of the mongrel type, notorious for low egg production and broodiness, poultry improvement work is being tackled from the following angles, namely,

(1) improvement of indigenous stock by selective breeding,

(2) distribution of purebred hens or cocks of breeds such as White Leghorn, Rhode Island Red and Minorca for grading to the prospective poultry keepers in the urban areas and to villagers in numbers who are mostly illiterate and belong to the "Harijan" community as there is still taboo amongst masses of Hindu population for keeping poultry in their own houses. Strangely enough the second world war has, indeed, done one good. Masses of orthodox people have taken to eating eggs or poultry and this may give a great fillip to this valuable industry in future.

STAINING TECHNIQUES FOR THE STUDY OF THE CYTOPLASMIC DROP AND THE CYTOPLASMIC CAP IN SPERMATOZOA

BY

C. K. RAO,¹ and R. O. BERRY,²

[Received for publication 5th October 1948]

Artificial insemination of farm animals has now developed into a very promising branch of science. With the widespread and increasing use of artificial insemination the breeding responsibility of the males used for this purpose has been greatly increased. We are thus confronted with the very important problem of semen evaluation. Undoubtedly, the most extensively used test for semen quality is the estimation of sperm motility and the single factor which has contributed most to the universal adoption of this technique is its simplicity, making it possible even for the lay inseminator to use it efficiently. From time to time attention has been focussed on the morphology of spermatozoa as an index of their fertilizing capacity. Although some work was done in this field, no effort was made to establish morphological examination of semen samples on a routine basis along with other tests for semen quality in artificial insemination work. It is very well recognised that no single method of semen evaluation can be regarded as perfect by itself, but a combination of two or more methods should lead to a better evaluation of semen.

For the best of results in artificial insemination work, it is of the utmost importance that the spermatozoa should be both physiologically and structurally normal. Much information can be obtained by a careful and systematic study of sperm morphology and with a larger amount of data at our disposal, it would be possible to associate certain types of abnormal sperm with sterility or impaired fertility. The staining methods that have been described for the study of sperm morphology are elaborate and tedious, making it difficult for routine use in artificial insemination work. It is hoped that with the advent of simple and rapid staining techniques, the interest in sperm morphology would be revived and that a more intensive study of this aspect of sperm physiology would be possible. Further, although the cytoplasmic drop of spermatozoa has frequently been described and discussed by several investigators, no standard staining procedure for demonstrating it has been described, except the one by Lagerlof (1936) using opal blue (Breslau). The cytoplasmic cap is another morphological feature recently

described (Rao and Hart, 1948, Rao and Berry 1948a, 1948b) for which no staining method has been presented for its demonstration in fixed semen smears.

In the staining of fixed semen smears, it is necessary to use some clearing agent to get the best staining reaction and chlorazene of varying strengths is commonly employed for this purpose. Recent work, (Mercier & Salisbury, 1947) however, has shown that the use of such clearing agents might increase the proportion of tailless sperm. The objects of this investigation are,

1. to present some rapid staining methods, which would make it possible to complete the evaluation of a semen sample in a few minutes
2. to find out some staining techniques for the demonstration of the cytoplasmic drop and the cytoplasmic cap, which can be used for teaching purposes, and
3. to determine the minimum time of clearing with a saturated aqueous solution of chlorazene.

Material and Methods

The animals used for this study include the stallion, jack, boar, bull, ram, goat and man. Whenever possible, both the ejaculated semen and sperm from the male reproductive tract were subjected to the staining methods. The actual preparation of the smears was according to the method described by Rao and Hart (1948). In making smears the edge of the upper slide should move over the surface of the lower one lightly and with the least friction. Two types of staining methods were used. In one case, the semen and stain were mixed together and smears made from this mixture. This method was used for the semen of the bull, ram and goat. For the semen of the boar, stallion and man, smears of plain semen were made first and later stained. Special precaution was taken to make the smears extremely thin. Simple air-drying was employed for fixation of smears. A saturated aqueous solution of chlorazene was used as the clearing agent with the fixed smears. Clearing of smears for 1/2, 1 and 2 minutes was tried to determine the minimum time required for clearing with good staining results. Uncleared slides were used as controls. Staining for different lengths of time was tried to find the least time required to obtain good staining. In this investigation our attention was mainly centered on the reduction of the time factor to the minimum without interfering with the efficiency of staining.

Stains for use with Semen before Smearing

These stains are used for directly mixing with semen. Formalin is used in the formula to kill the live sperms and enable them to take the stain. The actual process of staining consists in mixing a drop of semen and a drop of stain

1. Graduate student in the Department of Animal Husbandry College of Texas and at present Lecturer in Animal Husbandry, Madras Veterinary College.
2. Associate Professor of Animal Husbandry, A. & M. College of Texas.

together for one minute, or longer, with a glass rod or tooth pick and making smears from this mixture.

Stain I—Formula and preparation:—

Eosin Y	... 1.0 gm.
Formalin (40%)	... 5 c.c.
Distilled Water	... 95 c.c.

Eosin is dissolved in distilled water and formalin added. The stain is then filtered. Eosin B or Erythrocin can be substituted in place of Eosin Y. When stained by this method, the sperm as a whole takes a bright red colour. Cytoplasmic drops, when present, also take the same colour. The cytoplasmic cap is usually seen as a lightly stained area at the anterior end of the sperm head. It is recommended that examination be carried out under oil immersion lens.

Stain II—Formula and preparation:—

Methyl green	... 1.0 gm.
Formalin (40%)	... 5 c.c.
Distilled water	... 95 c.c.

The actual preparation of the stain is similar to that of stain I.—The sperm in this case takes a bright green colour. Morphology is best studied with the use of a high dry objective. When fresh semen is used, heads of sperm take a very light stain but this does not interfere with the study of sperm morphology. This is probably due to the great resistance on the part of the cell membrane of some sperm to the penetration of the stain. When cytoplasmic drops are present they take the same colour as the sperm.

Stains for Use with Fixed Semen Smears

The smears of semen are made as described earlier and are ready for staining as soon as they are dry. No special fixation is necessary. Clearing the smears for half a minute in a saturated aqueous solution of chlorazene has been found to give good staining reaction. After clearing the slides are washed in running tap water and then quickly air dried. To save time the undersurface of the slide and the edges are wiped with a clean cloth to remove as much water as possible. The slides are then placed in the stain solution.

Stain III—1% Aqueous solution of Gentian violet:—

After clearing and drying, the slides are placed in a 1% Gentian violet solution for 1/2 to 1 minute, then washed in running tap water and dried.* The smears may be examined under high dry objective or oil immersion lens, preferably the latter. The sperm as a whole take a uniform violet colour of varying intensity. When necessary deeper staining can be obtained by longer exposure of the smears to the stain. The connecting piece is clearly visible. Cytoplasmic drops when present take a violet colour.

*Rapid drying can be effected by pressing the slide between two layers of blotting or filter paper.

Stain IV—Weigert's iron haematoxylin and safranin

This stain is very valuable for the demonstration of the cytoplasmic cap and also the staining reaction of the different parts of the sperm.

Formula and preparation:

A. Haematoxylin	... 1.0 gm.
Alcohol (95%)	... 100 c.c.
B. Ferric chloride (29% aqueous)	... 4 c.c.
Conc. hydrochloric acid	... 5 c.c.
Distilled water	... 95 c.c.

It is preferable to keep A and B separately and mix equal parts of each just before use. The mixed stain has been used up to 2½ months with good results.

Staining procedure:

After clearing and drying the smears are stained for 3 to 5 minutes with Weigert's iron haematoxylin and then washed in tap water and counterstained for ½ to 1 minute with 1% aqueous solution of safranin A. The slides are then washed and dried. Examination may be carried out under high dry objective or oil immersion lens.

The sperm head takes a black colour, while the rest of the sperm takes a brownish tinge. The cytoplasmic cap when present is seen as a brown area at the anterior end of the sperm head which is black. Cytoplasmic drops also take the brown color. The connecting piece is clearly demarcated from the chief piece of the tail. Both parts take a brownish stain.*

Discussion and Summary.

It is absolutely essential that whenever a morphological study of sperm is undertaken the material, whether it be semen or epididymal fluid, should be examined fresh and before cooling. It is also of fundamental importance that artifacts should be reduced to a minimum and to recognize the fact that semen is best examined with the least manipulation. The process of making the smear itself is the most important stage in any morphological study. The need for clean, smooth, slides with straight edges cannot be too strongly stressed. This is necessary to obtain thin smears with a uniform distribution of sperm, while protecting the sperm from damage. Experience indicates that, when slides with jagged borders are used for making smears, the proportion of tailless sperm

* The neck can be seen as a separate region, taking a brownish colour and connecting the head and the tail.

increase and this factor is of far greater importance than the use of clearing agents. Before making the smear, it is always best to pass the edge of the upper slide along the tip of the finger to ensure that it is straight and smooth.

The use of any particular stain for the study of sperm morphology is purely a matter of choice. When semen-stain mixture methods are used, the whole staining process is completed in one stage with the least manipulation and in the shortest period of time. Where semen smears are made first and subsequently stained, a clearing agent appears to be indispensable to make a thorough study of sperm morphology. When the clearing agent is omitted in the staining process, the sperms take a lighter stain and are thus obscured by the deeply stained ground substance, making an efficient study of morphology difficult.

Chlorazene is the clearing agent of choice and a saturated aqueous solution was used to reduce the time factor to the minimum. Clearing the smears for $\frac{1}{2}$, 1 and 2 minutes was tried, and it was found that exposure for $\frac{1}{2}$ minute was sufficient to allow a quick penetration of the stain. It is essential that fixed smears are very thin and uniform. Preliminary observations indicate that such a quick clearing does not increase the number of tailless sperm.

Although staining with eosin and gentian violet brings out the cytoplasmic cap on most sperms, it takes a very light stain and can be identified only with experience. Difficulty in this regard is much less when sperm from the deeper regions of the reproductive tract are used since the cap is pronounced. For more demonstration of the cytoplasmic cap, Weigert's iron haematoxylin and safranin stain is the best to use. This is also the best stain to use for the demonstration of the various morphological features of the sperm and their staining reaction. With the use of the above stain the cytoplasmic cap and the drop are seen to be made up of cytoplasmic material which takes a brownish stain, while the head proper takes the black, nuclear stain.

From the above staining reactions it is suggested that the appropriate terminology to designate these structures would be "cytoplasmic cap" and "cytoplasmic drop" rather than "protoplasmic cap" and "protoplasmic drop" as used by Baylor, Nalbandor and Clark (1943) and Rao and Hart (1948.) This nomenclature is also substantiated by their origin as they appear to be derived from the cytoplasm of the spermatid.

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Editorial

THE NEW YEAR

Work is something that fills you with satisfaction, that enables you to realise that you are, in your own little way, doing a big job. It is not lack of work that gives you strength and energy but it is work that helps you to grow up yourself and helps others too.

* * * * *
You have the good fortune to align yourself to great causes. Work for them to the utmost of your ability without complaining about this or that. And, if you do that, you would find a satisfaction, a contentment which is something infinitely greater than mere happiness.

NEHRU

The New Year 1950 has been rung in, ringing out the old year, and we wish all our readers a really happy and prosperous New Year, with plenty to eat and with little to grumble about. This year is an epoch-making year in our country's history. It is at the beginning of this year—26th of January 1950, to be precise—that we are going to announce our country's new status *viz.* the Republic of India. With that proclamation, will commence a new era in our country. There will be a Government of the people by the people for the people, to use an oft-quoted political maxim. We of the Veterinary profession have got a vital role to play in making the common man feel the glow of freedom, in lifting him out of the morass of depression and lassitude and in converting him into a prosperous, happy and contented individual. This is no ordinary task and only hard work and toil can bring this about. Our beloved Prime Minister, who is 'one of the most hard worked individual in the world', has therefore given us the message of WORK HARD for the New Year and we are confident that every member of our profession will respond cheerfully to the message and give of his best sincerely and earnestly.

HORSE BREEDING

With the winning of our country's freedom, problems of varying kinds, surge forward with bewildering perplexities and complexities. Years of neglect of the essential requirements of the country has crippled many an industry and laid them prostrate and low. Consequently their resuscitation has become a gigantic task bristling with difficulties. Horse breeding is one such industry which requires urgent resuscitation in the interests of the country. But, unfortunately, ignorance and imperfect knowledge of this industry has created quite a great misconception about it and it is a matter for extreme regret that, even in quarters which ought to know better, such wrong notions prevail. It is often mentioned that, in this age of mechanisation, the horse has no place at all and that it may well be allowed to die out. Such erroneous views, freely aired, often mislead the public, although they cannot stand any close scrutiny. It is no longer a secret that, during the last world war, the Burma campaign would not have been such a success and would not have ended so early but for the active help given by the cavalry. In the steep ascents and descents on the Indo-Burmese border, the Animal Transport easily scored over the Motor Transports. Even highly mechanised countries like America and Russia have gone in for five-year and ten-year plans for Horse breeding, demonstrating thereby the importance which those countries attach to horses even in this machine age. As such, the argument that our Army will not need any animals when once it is mechanised, is far from being sound. Our own army is still in need of horses and is dependent upon foreign countries for its supply.

Again, the needs of the civil population are also very great. Our country cannot boast of grand trunk roads fit for mechanised traffic. Barring a few well maintained broad highways, the major part of the country is fit only for animal-drawn vehicles and it is unthinkable that, even in the near future, they will all be converted into motorable roads. Further, even highly mechanised countries like England have realised that, for short distance traffic, horses are far more economical than automobiles owing to their easy movability and cheap maintenance. The bullock-power which at present is the only motive

power for the agriculturists and rural traffic in this land has become far too slow for present-day requirements and requires to be supplemented by a swifter and more efficient one. Horse-power is easily the one which can do this from within the country's resources and without any strain on our finances. In addition to these factors, there is still another consideration about which we ought to think seriously. A large quantity of biological sera, like Anti-tetanic serum and Anti-plague serum, are prepared in our Research Institutes. As is well-known, horses are indispensable for these preparations and we need nearly 1000 horses annually for this purpose. It will thus be seen that there is a definite place for the horse in our economy, both civil and military. At present, the country is importing nearly two thousand horses annually from foreign countries and it would be extremely foolish on our part if we were to continue to depend upon this foreign supply for all times.

It is therefore imperative that active steps are taken to revive this horse-breeding industry and put it on a proper basis. Owing to a long period of neglect, the horses in this country have deteriorated enormously and it is going to be a great uphill task to produce some really good horses in our own country. Some amount of encouragement was given to this industry when the Congress Ministry first came into power in the year 1939 and a start in horse breeding was made with some thorough-bred mares and stallions. The output from this initial start is only very little now but it is bound to improve in the course of the coming years. Unfortunately, however, a declaration by the Government that they will abolish racing shortly has given a set-back to this industry and has well-nigh begun its liquidation process. A conflict of ideals has led to confusion of reasoning and is playing havoc to a promising prosperous industry. Be it here noted that this horse breeding industry, if helped and encouraged by the State, will not only improve the type and quality of our horses but will in due course stop all our imports in the course of a few years and thus help to save the drain from the country. The relation—the close and intimate relation—between horse breeding and racing is not sufficiently and adequately realised by the Government and things are being viewed in the abstract.

Horse breeding and racing are very intimately interwoven; one cannot be separated from the other. Breeding is a gamble; it is only rare that real quality foals are obtained. And unless they are adequately tested for their speed and stamina, then and there on the racing field, the breed will deteriorate and there will be a definite lowering of standard in the course of a few years. The selection of stallion and brood mares must be based only on their preformance and consequently horse breeding is an expensive business and very few people can afford to finance it. Nor can the Government afford to finance it right through owing to the heavy subsidy that will be required. "The Race Course is the Breeders' main market," and when the former is closed, the latter also goes automatically. It is in this aspect that horse breeding and racing should be viewed and, when that is done, it will become as plain as day-light that Horse breeding cannot survive without racing.

We, therefore, urge on the Government that they should not be in a hurry to pass legislations which will affect such a vital industry of the country as Horse breeding but, on the other hand, extend all facilities for placing it on an economically sound position for the ultimate benefit of the country.

'CIRCLING DISEASE' IN SHEEP

A study into its etiology

A PRELIMINARY NOTE

We are very pleased to learn that interesting research is going on in the Veterinary Biological and Research Institute at Ranipet, Madras Presidency, on the etiological factors concerning the 'Circling disease' in sheep which has been prevalent in this presidency. Opportunity was availed of an outbreak of the disease in some of the villages about 15 miles from the Institute for a detailed study and, for the first time in India, a record has been made on the isolation of the causative agent.

A paper entitled, "Circling disease of sheep in Madras Province—First record of isolation of the causative agent" by

Sri G. R. Viswanathan G.M.V.C., P.G. (Edin.), Superintendent, and Sri V. Venkatarama Ayyar, G.M.V.C., Veterinary Assistant Surgeon, Veterinary Biological and Research Institute, Ranipet, has just been received for publication, but, as it is late for inclusion in this issue of the *Journal* this short preliminary note about the findings is made now.

The authors have isolated from the central nervous system of five affected animals an organism resembling *Listerella* and have confirmed the findings by morphological, cultural, biochemical, fermentative and serological reaction experiments.

THE ALL-INDIA VETERINARY ASSOCIATION

Tenth All-India Veterinary Conference

The General Secretary of the All-India Veterinary Association (Sri M. S. Sastry) has desired us to announce that he has great pleasure in informing the profession that the Bombay Veterinary Medical Association has decided to invite the All-India Veterinary Association to hold its Conference in Bombay in April 1950 and requests all provincial Associations to take necessary steps from now to elect their representatives and delegates to that Conference. He also desires that members of the profession should muster strong on that occasion and make it an unqualified success. The exact dates of the conference and other particulars will be published in due course.

We need hardly add anything to the appeal of the General Secretary, which we publish elsewhere in this issue, for the support of the profession to the Conference. It will be the first of its kind since the country obtained its Independence and therefore bound to be memorable in more ways than one. Many vital matters will come up for consideration to enable the profession to take its proper place in the economy of the country and we earnestly endorse the appeal of the General Secretary and request the members of the profession to gather in numbers, contribute their mite in evolving a correct future programme for the profession and, in general, demonstrate that the veterinary profession is not a bit behind other professions in their zeal and work for the rehabilitation of the country.

THE NINTH MADRAS PROVINCIAL VETERINARY CONFERENCE

The above Conference which was held in Madras on the 26th December 1949 and the following two days with Rao Sahib T. Vinayaka Mudaliar, as President, was indeed a noteworthy one. The close co-operation between the Government and the Profession which has all along been a pleasing feature of these Conferences during the last few years was evident in a greater degree and assumed the impress of a real family gathering during this session. The climax was reached when the Hon'ble Minister for Agriculture and Veterinary Sri A. B. Shetty not only opened the Conference but also gave a delightful "At Home" party to the delegates and visitors and had informal talks with the members assembled. Such a gesture was quite unprecedented in the history of the profession. Coming as it did from one who, in his non-official capacity, had championed our cause in the Legislature for nearly 3 decades now, it gave a human touch to the proceedings, and evoked a responsive chord in every one assembled. It was a happy sign of the changed times and identified the interests of the ruled and ruler as nothing else would have done. As the President of the conference put it handsomely, such acts, nothing by themselves, such human understanding, go a long way in the scheme of things to make this world yet a pleasant spot to live in.

May such understanding become contagious and infectious and pervade all over our beloved country!

PERSONAL

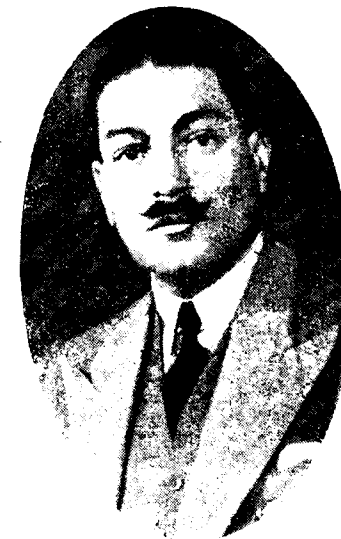
APPOINTMENTS

MAJOR A. C. AGGARWALA, B.Sc. (Hons.), M.R.C.V.S., A.I.R.O.

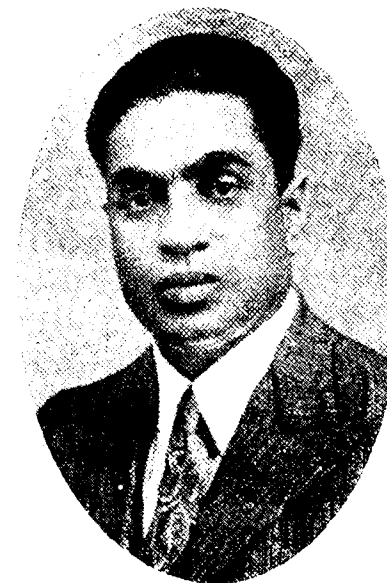
We congratulate Major Amin Chand Aggarwala on his appointment as Director of Veterinary Services, East Punjab. He has been one of the ablest members of the profession in India and we are sure his appointment as the head of the services in that Province would be welcomed by one and all.

Born on 26th July 1900 at Jullunder Cantt., Major Aggarwala hails from a famous Aggarwala family of Kartarpur, Jullunder District (East Punjab Province). With an uniformly successful school and College career, winning open competitive scholarships and several other distinctions, Major Aggarwala won the Punjab University Scholarship for standing first in B.Sc. Hons. (Zoology) examination. Later, he was selected as one of the five Government of India State Scholars for studying Veterinary Science in the United Kingdom.

He joined the Royal Veterinary College, London, in October 1921 and graduated in July 1924 with First Class Certificates of Merit in almost



MAJOR A. C. AGGARWALA, B.Sc. (Hons.), M.R.C.V.S., A.I.R.O.,
Director of Veterinary Services, Punjab, Simla.



K. S. NAIR, G.B.V.C., M.R.C.V.S., D.T.V.M.,
Jt. Director of Animal Husbandry, Madras,
who retired on 15-10-49.



Dr. M. Dharmarajan, M.A., M.Sc. Ph.D.,
Lecturer in Genetics,
Madras Veterinary College.

every subject and a Silver Medal in Veterinary Hygiene, Animal Nutrition and Animal Husbandry. He had the good fortune of getting his training in Veterinary Science under the world-renowned Professors like Sir John McFadyean, James Macqueen, George Wooldridge and Major Mattinson. He also gained valuable practical experience through professional practice with some eminent Veterinary Surgeons, like the late Sir Frederick Hobday and Mr. Henry Gray in England, Herr Max Lihert and Dr. Schumacher in Germany and with Monsieur Andre Bouchet of Chantilly in France.

On return to India, he was appointed Professor of Animal Husbandry and Milk & Meat Hygiene at the Punjab Veterinary College, Lahore, and was later commissioned in A.I.R.O., as Lieutenant in 1927. In due course, his services were availed of in all Committees and Councils connected with Veterinary matters in the Province and on the Indian Council of Agricultural Research where his views were greatly valued.

In the year 1936, Major A. C. Aggarwala acted as Secretary-Advisor to Dr. N. C. Wright, when the latter came over to India to enquire into the problems of the Cattle and Dairy Industries in India, in which capacity he did much valuable work. In 1939 he was appointed as Professor of Pathology, Bacteriology and Immunology at the Punjab Veterinary College, Lahore. On the outbreak of second World War, he was called up for service in August 1941. He was promoted to the rank of Major in 1944 and worked as Senior Veterinary Research Officer and Officer Commanding the Veterinary Wing of the Chemical and Defence Research Establishment (Rawalpindi and later Cannanore). He is the only Indian Veterinary Officer who knows anything about the defence of animals in relation to chemical warfare.

On release from Army service, he was appointed as Principal of the Lahore Veterinary College *cum* Professor of Veterinary Medicine in March 1946 which post he held with great credit until partition of the Punjab Province in August 1947. Considering his great organisational and administrative capabilities, capacity for hard work, and wide and varied experience, he was entrusted with the difficult task of starting the East Punjab Veterinary College at Hissar in February 1948, and, within a short period of 18 months, he has made that institution the pride of the Province and the best amongst all the post-partition institutions set up by the Government. He is also a Fellow of the East Punjab University.

Major Aggarwala is also a prolific writer. He wields a facile pen and his publications, especially, his book on Feeding and milking of cows in India, have been greatly appreciated.

We are confident that, with Major Aggarwala as the head of the Civil Veterinary Department, East Punjab, this new Province will forge

ahead rapidly and make the veterinary profession take its legitimate share in making the Province prosperous and happy.

RETURNED FROM ABROAD

M. DHARMARAJAN, M.A., M.Sc., Ph.D.

We are very glad to learn that Mr. M. Dharmarajan, who had been Lecturer in Biology in the Madras Veterinary College since 1936, has returned to Madras last month after training in Genetics and Animal breeding in Great Britain and Europe. He left India in 1946, on deputation by government, and was attached for over two years to the Zoology and Veterinary Schools of the University of Liverpool where he specialized in the Genetics and Reproductive Physiology of higher vertebrates. The results of his researches secured for him the degree of Doctor in Philosophy. After studies in Liverpool, Dr. Dharmarajan was seconded for varying periods at different institutions in Britain. He studied Animal Physiology, Breeding and Artificial Insemination at the School of Agriculture, Cambridge; Genetics, in all its aspects, at the Institute of Animal Breeding and Genetics at Edinburgh; and the latest methods of Artificial Insemination at the Cattle Breeding Centre of the British Ministry of Agriculture and Fisheries at Reading, Berks.

Dr. Dharmarajan has, besides, extensively toured Sweden, Norway, Denmark, Holland, France and Switzerland, and has acquainted himself with the Genetical Institutes and Genetical practice in those countries. At the instance of the Government of Madras, he also attended the Eighth International Congress of Genetics at Stockholm in the summer of 1948.

Dr. Dharmarajan has returned rich in experience of all the modern practices of organized breeding of animals and is taking up the teaching of Animal Genetics and Breeding at the Madras Veterinary College. It is hoped that he will be afforded ample opportunities to utilize his knowledge in the best interests of our province.

RETIREMENT

K. S. NAIR, G.B.V.C., M.R.C.V.S., D.T.V.M.

Mr. K. S. Nair, the first Joint Director of Animal Husbandry, Madras, has retired from the Madras Veterinary Service on 15th October 1949.

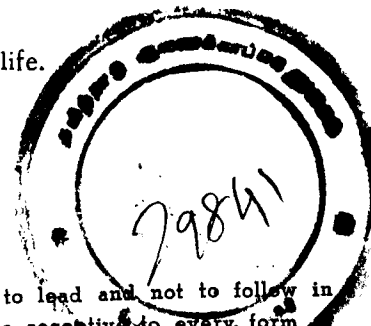
After completing his early studies in Trivandrum, he joined the Bombay Veterinary College in 1911 and passed out as a Graduate of the Bombay Veterinary College with high distinction in 1914. He joined the Civil Veterinary Department, Bombay, soon after graduation and served there for a short period. On the outbreak of the First Great War, he was

seconded for army service in 1916 and saw active service in Baluchistan, Seistan and Zhob Field Forces as Veterinary Assistant Surgeon in charge of the 65th Government Camel Corps. He was commended for good work done in the field and became a recipient of the General Service and the Victory medals. On being demobilised in 1920, he proceeded to Great Britain and entered the Royal (Dick) Veterinary College in 1921 for further Veterinary studies and took the Membership of the Royal College of Veterinary Surgeons in 1925, with 'Certificates of Merit' in nearly all the subjects. Returning to India, he was recruited in 1927 to the Madras Veterinary Service and was posted to the Madras Veterinary college as a Lecturer in Surgery. In 1937, he proceeded again to Scotland, joined the University of Edinburgh and took the post-graduate Diploma of Tropical Veterinary Medicine. On his return in 1938, he was appointed as Superintendent of the Veterinary Serum Institute. During the three years he was there, several new biological products, notably B. Q. Vaccine, were manufactured and put for use in the Province.

In December 1941, Mr. Nair was promoted as Principal of the Madras Veterinary College, which post he held till October 1947. In addition to being the Principal, he was Lecturer in Hygiene and Animal Husbandry. When the Government of Madras created a new post of Joint Director of Animal Husbandry, Mr. Nair was appointed to that post. He has helped to open the livestock farm of Vizagapatam and Kurukuppi and the Salvage Farm at Kambakkam. Three District Poultry Farms were also established during his tenure of office.

He has acted as the Director of Animal Husbandry of the Province on a few occasions.

We wish him a happy and useful retired life.



Universities and academic institutions had to lead and not to follow in matters of academic training. While they should be receptive to every form of advice, they cannot possibly relinquish their essential duty to maintain standards and it was necessary now more than ever in a free and independent Indian Republic to stress this point of view.

SIR A. L. MUDALIAR.

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Clinical Articles

LACTATION IN A PREGNANT MARE

BY

DHIROOBHAI K. DESAI, G.B.V.C., P.G. (Muk.), D.V.M. (Toronto),
Baroda.

(Now at the Bombay Veterinary College, Parel, Bombay).

It is very unusual to observe a pregnant mare letting down milk from the sixth month of pregnancy. Such a curious incident never occurred during the past several years at this stud, although, occasionally a pregnant mare after weaning the foal at foot, has been observed to have a return of the interrupted flow of milk. The following case is therefore interesting and worth recording.

The subject of this case was an Indian bred mare, aged 11 years, with a good breeding record. She was in foal and, when in her sixth month of pregnancy, she was observed to be having a flow of milk. The udder showed good development and, at each stripping, yielded about 4-oz of milk, normal in colour and taste. There were no other constitutional symptoms. Attempts to stop this flow of milk by internal medicines and continuous splashing of cold water on the udder were of no avail. The flow of milk lasted for about 6 weeks and then stopped. The udder also decreased in size considerably thereafter.

Subsequently, the lactation commenced about three weeks before the date of foaling when the milk was of a watery nature. The period intervening between these two lactations was three months and five days.

Studying the literature on the subject, it was found that Von Oettingen had mentioned about such cases in his book "Horse Breeding—Theory and Practice". He opines that, when milk begins to flow in a pregnant mare before the expected birth of the foal, it is a sure sign that the foal is ill in the womb. When the milk ceases to flow some weeks later, and the mare produces a healthy foal at the right time, without any lesions of illness, it is a possibility that the foal has fortunately surmounted over the illness. He also suggests that it may occur in twin pregnancies, when one of the twins had either died or is born much earlier than the other.

The above observations were taken into consideration while studying this mare. It was thought that the foal may be ill in the womb or that there may be twin pregnancies. However, it was not possible to detect these through rectal examination.

In due course, the mare foaled about three months after the initial onset of lactation. There were twins. One of them was alive and normal, while the other was of a cat's size, dead, and showed signs of degeneration.

It is very interesting to observe the correctness of the observations of Von Oettingen. In this case, it is quite possible that the initial onset of lactation about 3 months before foaling was an indication of the illness of one of the foals and that its subsequent cessation coincided with the death of the foal. I wonder whether any of my professional colleagues in breeding establishments have met with such a phenomenon.

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EFFECT OF IMMUNIZATION OF FOWLS AGAINST SPIROCHAETOSIS ON EGG PRODUCTION

BY

HARJAS RAI, S. P. BERI AND N. S. SANKARNARAYAN,

Animal Husbandry Department, Ajmer.

Fowl spirochaetosis is one the diseases of fowls which is now brought under effective control. Of the preventive measures so far known, the methods recommended by Srinivasan and Sankarnarayan (1943) is found to be very effective and more practical than the laborious entomological methods alone of destruction of the vector of spirochaetes, viz, the fowl ticks, *Argas persicus*. Although the method of infection and treatment by Sulfarsenol is safe and effective, it is not free from the economical loss of egg production. No doubt such economical losses are expected during the process of immunization against animal diseases, as, for instance, loss of milk yield in cattle during immunization against rinderpest, but it is essential to have a correct assessment of the economical loss which may be expected in undertaking immunization of birds against spirochaetosis in Poultry Farms by this method.

There was an outbreak of spirochaetosis among the birds of the Government Poultry Farm, Ajmer. As expected, the pens were found to be heavily infested with ticks, *Argas persicus*. Most of the pens were temporary structures with *Kutch* flooring and, due to practical difficulties, the oft-recommended entomological measure for the destruction of ticks was found to be impracticable. The best course under the circumstances was immunization of the birds by the method of infection and treatment by sulfarsenol. This was carried out accordingly. Altogether 190 adult birds, including layers, were immunized.

All the birds reacted to the experimental inoculation with temperature and organisms in blood and all, except one white leghorn chicken, were treated back to health by the administration of sulfarsenol. The mortality thus worked up to less than 0. 5%.

During the immunization, the only noteworthy fact was the fall in egg production.

TABLE 1

Showing egg production preceeding the immunization : -

Date	Total eggs for a month	Average daily production during each month.
September 1948	1245	41.5
October 1948	1261	41.0
November 1948	1026	34.0
December 1948	1059	34.0

TABLE 2

Showing egg production during the period of immunization : -

Date	Daily production of eggs
30-12-1948	40.0
31-12-1948	24.0
1-1-1949	35.0
2-1-1949	40.0
3-1-1949	17
4-1-1949	17
5-1-1949	16
6-1-1949	16
7-1-1949	14
8-1-1949	18
9-1-1949	26
10-1-1949	18
11-1-1949	21
12-1-1949	16
13-1-1949	27
14-1-1949	24
15-1-1949	20
16-1-1949	28
17-1-1949	29
18-1-1949	29
19-1-1949	35
20-1-1949	37

Table No. 1 shows that, during the months preceeding the immunization, the daily average of egg production was maintained steadily at 41 during September and October. The sudden fall in November is due to the setting in of winter and such reduction is usually met with every year. But the average fall is only once at the begining of winter and continues at that and would have continued in this case also, but for the disturbance brought about by immunization. The same number of layers were maintained during the period of immunization. The birds were infected with virulent blood on 31st Dec., 1948 and, on the 3rd day, they showed rise of temperature which exactly coincided with the fall in egg production. On the 4th day, they were treated with Sulpharsenol. The temperature in almost all cases came to normal the next day. Table 2 illustrates how the

birds continued their production average in December and also how they began the month of January with the same average. They would have continued their performance but for the rise of temperature on 2nd January 1948. Although the effect of temperature and the subsequent treatment under immunization lasted only for 5 days as shown in table 2 the birds took about a week afterwards to regain their normal capacity for production. The average loss in production during this fortnight works up to about 50% and this loss is solely due to the rise of temperature. When once they regained their normal capacity, they continued at that as shown in the same table.

The loss of egg production, however, can be considered as a sign of reaction to the experimental inoculation and the resultant immunity acquired from the reaction loss in eggs is exactly identical to the economical loss in milk in cattle during the period of immunization against rinderpest.

Summary

An outbreak of spirochaetosis among birds of Government Poultry Farm, Ajmer, was effectively combated by immunization of all birds by the method of infection and treatment with sulpharsenol. The birds acquired solid immunity as evidenced by the absence of the disease in spite of the continued presence of *Argas persicus* ticks in the pens. As an after-effect of immunization, egg production fell down to 50%. The birds regained their laying capacity only after a period of 3 weeks.

ACUTE FASCIOLASIS AMONGST CATTLE COMPLICATED WITH *THEILERIA MUTANS*

By

M. R. SEN, G.B.V.C., P.G. (Mukteswar).

Asst. Superintendent, Bengal Veterinary Research Institute.

Outbreaks of acute Fasciolasis amongst cattle, sheep and goats are known to occur in all countries, chiefly in low-lying and marshy areas. Statistics show that in Germany, in the years 1924 and 1925, it was so severe and wide-spread that 18,000 cattle, 60,000 sheep and 2,500 goats were destroyed ; also it caused the death of 1800 cattle, 12,000 sheep and 1,200 goats. Similar incidences occured in Yugo-Slavia in 1926-1927, and 62,000 cattle, 294, 864 sheep and 6,141 goats died of the disease. Severe outbreaks have also been observed in France, England, Holland, America, Asia and in Africa. In India, the disease has been reported for a long time from Hyderabad, Almora, Assam and from other parts. In Bengal, no particular

attention has so far been given for the investigation and control of this disease, although, every year several animals have been dying from uninvestigated and unrecorded causes.

During the month of May 1948, an officer of the agricultural department reported that Rinderpest was prevailing in some villages in Milda district and that several cattle and buffaloes had died of it. Two veterinary surgeons were immediately deputed there with necessary preventive medicines to control the epidemic. The veterinary surgeons visited the area and returned with the information that the disease was not Rinderpest and that it was of a peculiar nature. On this report, the writer visited the scene of outbreak. The disease was found to be persisting in the localities since the middle of March 1948, and 106 cattle and buffaloes were reported to have died in 2 outbreaks affecting 4 villages under 2 police stations.

Blood smears and faeces of 26 diseased and 12 apparently healthy animals were examined by the writer in the field. Examination of faeces did not reveal anything significant, excepting the presence of some ova of Flukes in 4 diseased animals and ova of *Haemonchus* in 1 apparently healthy and 3 diseased animals. Blood smears showed increased eosinophiles varying from 12 to 20% in all diseased animals and *Theileria mutans* in one healthy and 18 diseased animals. The parasites occurred in the blood only in small numbers and were detected only after prolonged search. They were mostly small and rod-like in appearance; pear-shaped and small ring forms were also seen in a few animals. Seven carcasses were autopsied and a large number of *Fasciola* were recovered from the liver, gall-bladder and also from abdominal cavity. No Amphistomes were found excepting in one case where a few adult Amphistomes were recovered from the stomach. Scrapings from duodenum and other portions of intestines were examined microscopically, but no immature Amphistomes could be detected in any case. On a previous occasion, in September 1947, a similar outbreak causing death among 9 buffaloes and 14 cattle in a village in Midnapore district was encountered and attended by the writer. On autopsy of one of those carcasses, innumerable leaf-shaped flukes of varying sizes were found embedded in the liver and gall-bladder, but no importance was given at that time to the finding. In May 1949, another outbreak of similar nature was reported by a veterinary surgeon from Basirhat, in the district of 24 Parganas. Over 50 cattle and buffaloes were reported to have died of the disease and the veterinary surgeon sent blood smears from 3 ailing cattle. Although, *T. mutans* was detected in the blood in small numbers, the veterinary surgeon was asked to send a detailed P. M. report and also the viscera. Thereupon, the veterinary surgeon reported to have recovered large number of *Fasciola* from liver and gall-bladder of the 4 carcasses on which autopsy was performed by him and he did not note any other pathological

change in other organs. His findings were confirmed by this Institute from an examination of the visceral organs. The liver showed several nodules and calcified foci containing leaf-shaped flukes of varying sizes. Search for Amphistomes yielded negative result. The A.D.I.O., (Helminth) meanwhile visited the spot and his findings corroborated those of the veterinary surgeon. Since, in the present outbreak, the infection from *T. mutans* was not found to be heavy in any animal, it was suspected that the mortality was due to heavy infestation with Flukes.

Symptoms :—The first noticeable symptoms were anorexia, dullness, disinclination to move, temperature 101° to 102° in most cases, rapid emaciation, and, in about 50% of the cases, oedematous swelling at the dewlap, or, at the submaxillary space, which in a few animals extended up to the face and cheek. Dropsical conditions involving the lower part of the limbs were also observed in 2 animals. The oedema subsided naturally after a few days but reappeared in some cases. After about a week, or 10 days, the consistency of the dung changed and became softer and softer, day by day, but rarely did it assume watery character. The diarrhoic faeces were dirty green in colour emanating foetid smell and contained mucous flakes in a few cases. No blood cell could be detected in them. The animals became weaker day by day, lay down, defaecating involuntarily and showing great prostration. Finally the animals died within a period varying from 2 to 4 weeks after the appearance of the first noticeable symptoms. Sudden deaths of 4 cattle showing similar symptoms like that of Anthrax were also reported by the owners of the same locality.

P. M. Findings :—The carcasses, in general appearance, resembled those of Rinderpest and were found highly emaciated. The hind quarters and tail were soiled with diarrhoic faeces. Muscles were atrophied and pale. Gelatinous exudate at the throat was present in most cases. Abdominal cavity contained 1 to 4 pints of serous fluid and, in 2 cases, the fluid was slightly tinged with blood. *Fasciola* of varying sizes were found adhering to the diaphragm and abdominal wall. Liver in all cases showed acute hepatitis. It was enlarged and congested with cloudy patches and showed raised nodules and purulent and calcified foci containing young and adult *fasciola*. Gall-bladder was found packed with *Fasciola* of varying sizes. Nodules and Foci were also present in Gall-bladder of 3 carcasses. Nodular formations containing flukes were found in the stomach and intestines of 2 animals. Flukes were also recovered from mesenteric glands and lungs of 1 animal. Thorough search for immature and adult Amphistomes in liver, stomach and intestines of all the 8 carcasses was made but none was detected. Some adult Amphistomes were found in the stomach of only 1 carcass. Similar Postmortem findings were reported by the veterinary surgeon, Basirhat, who performed autopsy on 4 carcasses in a recent outbreak causing over 50 deaths amongst cattle showing similar clinical symptoms.

Discussion:—Although the clinical symptoms observed in the outbreaks described in this report appear to be identical with those of Acute Amphistomiasis of cattle as reported by Pande (1935) Maqsood (1944) and by a few others, the parasite responsible for the mortality amongst cattle and buffaloes in these outbreaks seemed to differ. Fasciola was evidently responsible for the mortalities recorded in this report. Amphistomes could not be detected in the dung of the 26 diseased animals examined microscopically, nor could they be detected on the autopsy of 8 carcasses performed by the writer and 4 carcasses by the veterinary surgeon, Basirhat. Microscopical examination of scrapings from duodenum and from other internal organs also yielded negative results. Some adult Amphistomes were, however, recovered from the stomach of 1 carcass, but these could not have been the causal factors. Adult Amphistomes have been constantly observed infesting the stomach of several animals during routine P. M. examination in various epidemic diseases previously encountered and attended by the writer, but they were never considered to have any special significance on the death of the animals. Recently, the presence of large number of immature amphistomes in the stomach and intestines of the sheep causing loss of about 100 sheep and goats at Asansol was recorded but no cattle in the vicinity was reported to have died from such infestation.

In the present outbreak, *T. mutans* was also detected in a larger number of ailing cases. Though the parasites themselves may not have great pathogenic effect, still, it is possible that their presence hastened the death in the severely Fasciola infested animals.

In all the above outbreaks, bovines of all ages were found equally affected. Three outbreaks appeared in the months of March and April and one appeared in the month of August. The cattle of these localities were stall-fed from July to September, the grazing land during the time being inundated with rain water. During post-monsoon period i. e. October and November, when the animals were let out again for grazing, this area was fairly free of water, though there were pockets of stagnant pools abounding in snails. Possibly, this land was getting repeatedly re-infested with the ova of parasites from the dung of fluke-carriers that gather there at the commencement of the grazing season. A few showers of rains in December and January help in mass production of cercarial cysts, which after escape from the snails, found easy access into the grazing animals. Subsequently it took about 2 to 4 months for them to develop in the animal body and manifest themselves during March and subsequent months.

It is difficult to ascertain the percentage of infection and mortality as the disease, in many of the less severely infested animals, might remain unnoticed. From the case records, it appears that about 20% of the total bovine population of the affected villages manifested clinical symptoms and 70% of them died.

Treatment:—15 to 45 grains of copper sulph in 1% solution was given daily for 5 to 6 days to the ailing animals. Similar line of treatment was also advised for apparently healthy animals. Out of 26 diseased animals treated, 18 died. 12 apparently healthy animals manifested clinical symptoms and 3 of them died in spite of treatment. It appeared that copper sulph might have some beneficial effect in the early stage of infection but it proved ineffective in the more advanced cases. Treatment with Hexachlorethene is under observation.

Summary

1. Outbreaks of Acute Fasciolosis amongst cattle and buffaloes in Bengal have been described.
2. Clinical symptoms observed in Acute Fasciolosis are identical with those found in Acute Amphistomiasis as reported by Pande in 1935. Thorough search for immature Amphistomes yielded negative results.
3. Low grade infection with *Theileria mutans* was observed in many of the Fasciola infested animals.
4. Treatment with copper sulph proved ineffective in advanced cases of Fasciolosis.

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HOMOEOPATHY IN RINDERPEST

By

CAPT. G. A. SASTRY, B.V.Sc.,

Department of Physiology, Madras Veterinary College.

Thousands of cattle are lost in India from Rinderpest alone and hence the loss to the country is immense, as the agriculturist, the back-bone of Indian Economy, is not able to cultivate his lands without his cattle. As most of the ryots are small holders, they cannot afford to have tractors and hence have to depend on cattle. Especially now, in PRODUCE or PERISH times, our nation cannot afford to leave her lands uncultivated and hence the need to preserve her cattle.

There is no definite cure for animals affected by Rinderpest, though various antiseptics have been tried. The present day policy with respect to Rinderpest is to protect healthy animals by building up artificial immunity and leaving the affected to fight for themselves.

Though Allopathy has been unsuccessful in treating Rinderpest cases, yet Homoeopathy has to its credit large numbers of cures. In this country, Isa Tweed has found Homoeopathic medicines very useful, while Dr. D. N. Koppikar has treated hundreds of cases without a single case of death among those he treated. He quotes his son's experience in Udipi, where he was in charge of cows of the famous Krishna temple. He could cure 80 out of 87 cases, the remaining 7 having come to his care in a far too advanced stage. I have myself treated a few cases and found these remedies very successful.

Homoeopathic remedies and their indications.

(1) *Mercurious Vivus*.—200th potency in the early stages with lesions in the mouth.

(2) *Mercurious Corrosivus*.—200th potency when the motions are very bloody and there is severe straining. These two will be quite sufficient in the majority of cases. But occasionally one may have to use the following also.

(3) *Arsenicum Alba*.—30th potency. Chiefly useful in meeting the prostration about the 5th or 6th day.

(4) *Rhus Tox*.—30th or 200th potency. For the muscular twitchings which characterise the disease in some of its stages.

(5) *Ammonium Casuticum*.—30th or 200th potency. Where there is much abdominal distension.

(6) *Terebenthinae*.—30th or 200th potency. For checking Haematuria.

(7) *Aconite*.—30th potency. When temperature is high, pulse fast and skin dry.

(8) *Belladonna*.—30th potency. Restlessness, bellowing, beating the ground with the hoofs, unruly and vicious condition, lustrous eyes with blood-shot condition.

Dosage and mode of administration.—5 to 6 pills, every 2 hours, given along with jaggery.

The convalescence may be cut short and the animal made fit again in a short time by the administration of a dose of Sulphur 200.

In an outbreak, the first 2 medicines may be used prophylactically—one dose a day for 4 or 5 days.

Conclusion

I request all veterinarians to make use of these medicines and lend a hand in the grow more food campaign in response to the fervent appeals made by the Hon'ble Prime minister and record their findings. I request that research may be instituted into the curative and prophylactic powers of these remedies. In my opinion the various Serum institutes where Anti-Rinderpest Serum is manufactured are the ideal places to conduct such research.

A potent Homoeopathic preparation from the saliva of an affected animal may be prepared for prophylactic use just as Anthracinum from animals suffering from Anthrax, Lyssin from Rabid dogs, Variolinum from pox animals etc. This preparation, a nosode, may be called RINDERPESTIN or simply PESTIN. But for such a preparation a good deal of research must be done where facilities are available and, as I said above, the serum institutes are the best places for such research.

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To Meet At Bombay

BOMBAY, true to her high traditions, seems to be bent upon resuscitating the All-India Veterinary Association and its periodic Conferences. All honour to her!

Undaunted by the various obstacles that have been cropping up in her way, the Bombay Veterinary Medical Association has now decided to have the Tenth All-India Veterinary Conference at Bombay in April 1950. Exact dates will be announced later. That is good news indeed—the best we have had for so many years now! The Conference will thus meet after a lapse of nearly 13 years! It is hard to believe that our profession could have allowed such a state of affairs to occur! But the humiliating fact is there.

Now, what is the duty of the rest of India? It is obvious. If the rest of India does not rush up to the help of Bombay, it will be to the lasting indictment of our profession. Further, the All-India Veterinary Conference will meet for the first time in Free India. Many national problems await solution in every walk of life and many such problems in our own field. There is no escaping from it. Bold leadership and proper guidance are necessary. The ensuing Conference is bound to meet those requirements.

I appeal, therefore, to the various Provincial Associations to get busy immediately, call for their meetings, decide about the number of delegates to be sent, which for obvious reason must necessarily be large and formulate proposals to be placed before the Conference. The time before us is short. Act now and immediately; that is my request to individuals and Associations. It is binding on all the 'leading lights' of our profession, in each Province or State, to come forward and give the correct lead to the profession at this juncture. May I hope they will not be found wanting?

I shall be thankful if the Provincial Associations furnish me with all the necessary particulars on the points indicated above, sufficiently early, so as to enable me to make the usual arrangements for the boarding and lodging of the delegates and for drawing up a comprehensive programme.

An early reply is solicited.

149, Margosa Avenue,
Malleswaram, P.O., Bangalore, 3.
January 7, 1950.

M. S. SASTRY, G.B.V.C.,
General Secretary,
The All-India Veterinary Association.

THE MADRAS VETERINARY ASSOCIATION

Proceedings of the Ninth Provincial Veterinary Conference held under the auspices of the Madras Veterinary Association at the Madras Veterinary College on 26th and 28th December, 1949.

First Day, December 26th, 1949.

The conference commenced at 10 A.M. on Monday, 26th December, '49 in the Swarajya Hall of the college which had been gaily decorated. The following members were present:—

1 Sri T. Vinayaka Mudaliar (President).	47 Sri M. G. Dandapani
2 „ R. Swaminathan	48 „ V. Muthiah
3 „ S. V. Mudaliar	49 „ K. Govinda Sastry
4 „ K. S. Nair	50 „ S. M. Balakrishnan
5 „ G. R. Viswanathan	51 „ C. Venkateswara Rao
6 Dr. G. Venkatachalam	52 „ M. V. Sankaranarayana
7 Dr. I. M. Azizuddin	53 „ G. Venkataratnam
8 Sri C. Krishna Rao	54 „ G. Ayyavaru Sastry
9 „ M. S. Sastri	55 „ V. S. Alwar
10 „ T. Srinivasa Rao	56 „ P. Srinivasan
11 Mr. Bertie A. D' Souza	57 „ V. Panduranga Rao
12 Sri C. V. Padmanabhan	58 „ D. Krishnamurty
13 „ K. P. Chandrasekharan	59 „ D. Pattabhiraman
14 „ C. K. Velayudha Nair	60 „ P. Venkataraman
15 „ V. J. Balasundara Das	61 „ K. N. Govindan Nair
16 „ T. L. Anantaraman	62 „ K. S. Krishnaswamy
17 „ K. R. Lakshminarayana Iyer	63 „ D. A. Victor
18 „ V. Appu Rao	64 „ Balaprakasam
19 „ J. D. David	65 „ E. R. Nagarajan
20 „ S. Ramanarayanan	66 „ T. Narayanan
21 „ M. S. Rajendran	67 „ V. Rayappa Reddy
22 „ M. N. Menon	68 „ P. Soundararajulu
23 „ R. N. Govindaswami	69 „ C. Bharadwajam
24 „ P. M. Thillanayagam	70 „ B. Ramiah
25 „ K. Ranganathan	71 „ B. Subbarayulu
26 „ P. K. Rangesha Rao	72 „ K. Mallikarjuna Rao
27 „ D. Nilakanta Iyer	73 „ K. R. Lakshminarayana Iyer
28 „ K. T. K. Nambiar	74 „ A. L. Ramaswamy
29 „ N. Balasubramanian	75 „ M. Muthugopal
30 „ R. Boomalingam	76 „ R. Veeramani Iyer
31 „ M. Ranganathan	77 „ R. Venkatanarayana
32 „ M. Kameswara Rao	78 „ M. S. Ganapathy
33 „ D. Jayaraman	79 „ G. Pandurangam
34 „ K. S. Venkataraman	80 „ M. V. Krishna Rao
35 „ C. Dharmalingam	81 „ D. Mariappa
36 „ K. Satyanarayana Rao	82 „ K. V. Parthasarathy
37 „ R. H. Sundaram	83 „ K. Ramani
38 „ L. Venkatachalam	84 „ K. S. Krishnappa
39 Janab G. Ahmed Hussain	85 „ R. Kuppanna Iyengar
40 „ D. Abdul Hafeez	86 „ G. N. Panduranga Pillai
41 Sri K. V. Satyanarayana	87 „ K. Vanchathan
42 „ S. Jayaraman	88 „ C. B. Viswanathan
43 „ M. S. R. Anjaneyulu	89 „ A. R. Madusudan
44 „ S. Srinivasa Rao	90 „ P. L. Narayana Rao
45 „ M. Ramakrishnan	91 „ T. Ananthapadmanabhan
46 „ V. Ratnasbhapathy	92 „ E. V. Balu
	93 „ Thulsiram Singh

94 Sri V. Venkataraman	101 Sri P. Subramanian
95 „ T. S. Alagappa Pillai	102 „ Raja Ram Mohan Roy
96 „ V. Janakirama Iyer	103 „ K. Ramakrishna
97 „ T. Natarajan	104 „ M. Narayana Rao
98 „ F. W. Wilson	105 „ C. N. Subbaraman
99 „ A. R. Vedanayakam	106 „ G. B. Balagurunathan
100 „ A. Krishnaswamy Iyer	107 „ L. Ramaswamy

Among the visitors present were :—

1 Sri Mr. T. J. Hurley	13 Miss T. S. Manickkam
2 Major T. Murari	14 Sri R. V. Mudaliar
3 „ R. Koteswara Rao	15 „ B. Naganna
4 Sri Y. Sivarama Menon	16 „ M. K. Narayana Nair
5 „ M. Dharmarajan	17 „ M. Narayana Rao
6 „ M. Anantaraman	18 „ Dr. Rishi
7 „ H. Narahari Rao	19 „ Radhakrishna Pillai
8 „ S. C. Alagappan	20 Mr. Chandy of Adair
9 „ T. Chandrasekhara Reddy	Dutt & Co. Ltd.
10 „ B. M. Lakhmipathy	21 Mr. M. Sarathy of Suren & Co. (T.C.F.)
11 „ T. S. Manickkam	22 Dr. M. G. Varadarajan
12 Mrs. T. S. Manickkam	23 Sri M. R. Subramania Sastri

The proceedings commenced with a prayer by Sri G. Venkatachalam. Sri S. V. Mudaliar, Principal of the Madras Veterinary College and Chairman of the Reception Committee, in welcoming the gathering, delivered the following address.—

MR. PRESIDENT, THE HON'BLE MR. A. B. SHETTY, LADIES AND GENTLEMEN,

As chairman of the Reception Committee, allow me to extend to you all, assembled here, a most hearty welcome. I feel the pleasure of welcoming you, all the more because, this honour was given to me for a second time, in succession, for which I tender my gratefulness to the appropriate quarters. Last year, it was not without a degree of solemnity, mixed with pleasure that the deliberations of this Conference were ushered in, caused by the passing away of the Father of the Nation. Things have gone on, since, without much cause for regret. The Hyderabad tangle was solved. The Kashmir issue is being set right. The dawn of the New Indian Republic is looming large on the horizon, to usher in the new era in the history of this ancient country. Exactly in one more month's time from to-day, the Indian Republic will be heralded. So we are in the imminence of a great many good things, cherished for long, long years, becoming realities. In the ecstacy that is naturally experienced on the eve of great things, let us not forget the great person who was instrumental in getting all these for us—the Great Mahatma, the Father of our Nation. May his soul rest in peace and guide our destinies.

Misgivings, there were, when the holding of this Conference was to be decided to take place during this week of December, when there are

a number of other Conferences and meetings scheduled to be held about the same time; notable of which are the 10th Session of the All India Agricultural Conference and the Mathematical Conference. But the enthusiasm of the members of this association will not brook anything towards a postponement. And so, we are having it now and having it under the presidentship of a person who was one of the pioneers and progenitors of this Association, one who had to play a very prominent part along with his comrades in the infant age of this body, beset with all the trials and tribulations, of which this Association had to toil and labour hard before it could settle itself safe and clear of all storms. He is now a free man and a strong one under whose guidance the sessions are bound to be successful.

The Hon'ble Minister for Agriculture and Animal Husbandry is in our midst to open and address the Conference and give us guidance in the onward march of our profession and the development of our Science to more and more heights of advancement. He is not new to us, Veterinarians. He has sponsored our profession and advancement of Animal Husbandry problems long before he took charge as Minister for Agriculture. Things are naturally easy for him to understand when they are before him for scrutiny and adoption. And the Hon'ble Premier who may have to play his part in the successful advancement of the Science was the Minister in-charge of this subject before and hence is in possession of first-hand information. Need I say that we have just now the proper environment to foster and develop our Science and profession, as most happily situated are we, at the present moment.

To you, the large number of delegates, fellow professionals and colleagues hailing from the districts, I, on behalf of the Reception Committee, have immense pleasure in according a most hearty welcome. It is these contacts that are most necessary and useful in a profession of our kind, which afford the opportunity to meet each other, exchange notes and views of one another and renew the ties of long-standing fellow feeling and friendship. I am sure this large number of delegates will appreciate the meagre comforts that are within our means, arranged for them, taking into consideration the great deal of difficulty that the country is experiencing in the matter of food and other essentials.

To the several ladies and gentlemen, who have made it convenient to attend this function, in spite of their several other more pressing engagements, I extend a warm welcome and express my gratefulness. They are the people to assess our worth and judge the honesty of our work and feel sympathy over our difficulties and come forward to the betterment of our Science and service, in their own way.

In a few more minutes, the Hon'ble Minister will formally open this Conference and to him all the members of the profession will look up to,

with a sense of suspense and satisfaction. As one, who has been in the profession for the past nearly 29 years, served it in all its spheres, though for nearly two-thirds of the period, in this very College, I feel it my duty to place before the Conference and before the Hon'ble Minister, who is going to inaugurate its sessions, my own views and impressions on the several aspects of the Science, its development and its future. It is not a tale of difficulties and disappointments of the profession that I am going to put up to him. It will not be in the fitness of things, that the host will ever think of being so unrealistic to the guest by narrating a series of wants and grievances. The occasion is one where an opportunity is to be given to set forth the views and aspects that this Science and profession demand to those who must know. Hence, I am sure the Hon'ble Minister and this House will say "go on" to me and let me at once tell you, Sir, that I will take the absolute minimum of time that the occasion can tolerate and the subject demands.

Education:—Since we reviewed Veterinary Education in this College during our last Conference, changes have happened, certainly to a further development and improvement. The Final and Fourth Year of the Revised B. V. Sc. Degree Course commenced in July, 1949 and the Examinations will be over by June, 1950. I am happy to say that Graduates in larger numbers will become available from 1950, more so in 1951, and onwards.

As a result of the improvement in the prospects afforded to the outgoing Graduates from this College, the demand for seats has increased tremendously. But conditions of accommodation, equipment and staff demanded immediate attention in the beginning of last year. Representations had to be made to the Government. As a result, Government appreciated the urgency of the situation and immediately came to the rescue. They sanctioned about 3 Lakhs of Rupees to improve and implement the accommodation for lecture halls and laboratories and hostel. Funds were sanctioned for the purchase of badly needed equipment like microscopes, which could not be had for the past several years, due to prevailing war conditions. Two new posts of Lecturers were sanctioned during the year. One Motor Van for the use of the students of the College was made available. The short Course for training the Veterinary and Livestock Inspectors was transferred from the College to the Hosur Cattle Farm to ease the available accommodation in the College. And the number of admissions to the Course was reduced from 100 to 80. All these and more, were the achievements of the period after the last year's Conference. Could we have had all these but for the fact that we have a popular Government and once they understand the difficulties, they come to the rescue immediately. And I take this opportunity of publicly expressing my gratefulness to the Hon'ble Minister and his Secretaries and

Government for this timely help and that, at a time of financial difficulties. Though the building and equipment side of the improvement in the College have had some amelioration, the insufficiency of staff remains the same and unattended to, particularly with the increased admissions (more than two-and-a-half times the number for which the present staff was meant originally). There is no use, feeling complacent about this College being far superior to other Colleges in the country. Several Colleges are being started in other parts of the Indian Union. Already two more Colleges have been newly started and affiliated to the respective Universities. These new Colleges have all the advantages in the matter of finance, and might develop into useful institutions which will be our desire also. This College that has evolved to this stature from a small beginning will certainly maintain its superiority over other institutions, in spite of any reverses. It behoves us all who have had any thing to do with the organisation of Veterinary Education in this Province and the Government, to see that every effort is made to keep up the name and fame of this institution as second to none in this country which position it has so long maintained and will not surrender under any circumstance. A perusal of the status and number of the staff employed in those Colleges will reveal how lavishly they have provided for them. The tendency, naturally, is that some of the members of our staff are attracted towards the liberal conditions of service offered by the other Colleges. And we cannot morally keep back those who aspire for betterment of status from leaving us, but we can ill-afford to lose such trained staff, especially at a time, when we need more and more staff to cope up with the needs of an increased number of students to be trained. What else is more honourable and moral for us to do, now, than setting our House in order and keeping it safe and contented.

The Madras University Commission recently inspected the College thoroughly and a report is due shortly. The Commission appeared to have been satisfied with the few improvements that are being done for the betterment of accommodation and equipment. But they did not agree that the staff was adequate or had a status consistent with a University affiliated College. What has actually been happening is, that the number of admissions was raised from 40 to 100 without simultaneously attending to the other requirements, to cope up with the needs of the Institution in handling such increased admissions. Further more, no scientific equipment could be purchased nor could any increase in the teaching staff be made to meet with the increased demands of the College, during the last ten years due to war conditions.

It was shown in my address during the last year's Conference how the number of applications received for admission to this College went on increasing, resulting in an increase in the number of admissions also.

However much we might try to improve the existing conditions in this College, it will not be possible to achieve lasting results without substantially adding to the buildings, equipments and staff, to maintain this already increased number of students. Is it not time now that we think of a second College for the Province? With the impending formation of the Andhra Province, the starting of a new College for the Andhra districts will go a long way to satisfy a long cherished desire for this. If such a scheme to start a College for the proposed Andhra Province before the next academic year is taken up seriously, the number of admissions will have to be almost cut down to 50% since the First Year Class can start in the new College itself. This will gradually relieve the congestion in this College also.

Regarding the recruitment of staff to the College, there seems to be a great amount of confusion and want of understanding of things in their proper perspective. Whatever rules or regulations that are in existence now to regulate the appointment of members to the College staff, will have to be changed with no further delay. These rules have outlived their days and should have been modified long ago. Before the affiliation of this College to the University and so long as the Graduate of the College was crowned with a Diploma of the Government, the existing rules for the recruitment of staff members were adequate. Since the affiliation, conditions have changed. The University insists on a Post-Graduate Degree and teaching experience, for the teaching staff of the College, while these qualifications are not necessary for the Departmental staff. It must become apparent to everybody that it is not possible to have any interchange of staff members between the College and the districts. And at the moment we have a very few members who have any Post-Graduate Degree and all those must be taken into the College. There can be no question of comparing these men with those in the Department, who may be seniors in service but who do not possess the qualification—Post Graduate Degree and teaching experience—required for service in the College. No stretch of imagination seems necessary to infer that the College staff have to be kept separate from those of the Department, under these circumstances. As such, no unnecessary delay need be made in effecting this measure and keep the College staff as a separate Unit and Cadre. Necessary amendments to regulations governing the recruitment of staff for the College may be brought about soon.

Veterinary and Livestock Inspectors' Course:—As regards the functioning of the Veterinary & Livestock Inspectors' Course, the Venue of the Course was changed to Hosur Cattle Farm, which is a step in the right direction. But due to the delay in the construction of a hostel, sanctioned last year, not being taken up yet, there is a great handicap and it is expected that the buildings for the hostel will materialise before the Conference meets again, next year. Facilities afforded by the proposed hostel will not

be complete unless electricity is extended to the place. The Station promises to be capable of development and several schemes of research in Animal Genetics and Breeding are being visualised. For all these, the need for the supply of electricity and water, cannot be overemphasised. It is understood that the Mysore Government are only too willing to extend their supply to the Station. This may be availed of, without any further delay.

Post-Graduate Education:—The resuscitation of the Refresher Course for the benefit of the District staff, that was given up during the war years, has to be taken up. This is being held up only for want of facilities in the College with its largely expanded strength of students and paucity of accommodation and staff. The question may come up next year after reviewing the accommodation problem then.

Facilities for students undertaking post-graduate research are at present very meagre and a few students have done work in the Departments of Parasitology, Anatomy and Animal Nutrition, followed by the award of M. Sc. Degrees. But there is a need and an urgent one for facilities in other subjects as well.

A case was put forth during the last year's Conference for the starting of a Central Institute of Veterinary Research in South India, on the same lines as the Indian Veterinary Research Institute, Mukteswar. This question was mooted during the last Animal Husbandry Wing Meeting of the Indian Council of Agricultural Research, at Mysore. No headway, not even serious notice seems to have been taken, in that direction. The place and environment afforded by the College, with its clinical material available in the hospitals and the existence of several laboratory departments, already, in the College, may easily form the nucleus for the starting of a Research Institute. It was stressed even during the last year's Conference, how one Central Research Institute is not at all adequate for the entire country and how at least a second one was imminently required. The necessity is all the more felt, now, that the scheme of deputing service members for overseas post-graduate training, has been suspended by the Central Government. A beginning may be made here and now. This College can be developed into a combined Institution for teaching and research, under the head of the Institution. Already, we have a few men equipped with Post-Graduate qualifications in Bacteriology, Animal Genetics and Breeding in the College. If the gesture is accepted for the formation of an Institute for Animal Husbandry and Veterinary Research, schemes for evolving different departments to constitute the research part, may be planned.

Biological Products Manufacture:—The Station at Ranipet which is now engaged in the manufacture of biological products required for animal diseases, is capable of development further and the manufacture of products

such as Tuberculin, Mallein, Johnin that are not now included in its scheme, is being taken up. The question of enlargement and expansion of the Institute into a first-rate biological products station, dealing with all the products required for protection of animals, deserves the consideration of Government.

Livestock Management.—The scheme for starting cattle breeding stations one in each district is progressing very slowly. The difficulties encountered in implementing this, are realised. But still, this work has to be taken up with much more enthusiasm. A five-year plan should be chalked out and a definite number of farms must be set for each year to be completed in that period, when there is now a separate Officer—the Joint Director of Animal Husbandry, to attend to the livestock work alone. The highly trained persons in the methods of animal breeding in foreign countries must be utilised for the benefit of all the farms and not restricted to a single place. The services of such highly trained persons must be utilised to the fullest extent after a short period, during which time they might contact all the present farms in the Province. The executive work in a farm should be in the hands of those who have had experience in local problems of labour. The scientific attainments of a person, on the latest advances of Animal Breeding should not be wasted on the control of labour and other executive work in a farm.

Research schemes on the breeding of milch cows, sheep for wool and poultry for egg-yield, should be started. Now that the Scindhi breed of cattle is not available for purchase, from their original breeding tract, measures should be taken to explore the possibilities of obtaining cattle from other breeding centres and also take up the foreign breeds. Though the development of cross-breeds of cattle was given up in the past, as a policy, with the changed conditions in the availability of good milch breeds of cattle to grade up our indigenous ones, it becomes necessary not to stick to our old policy of excluding foreign crosses in our farms. After all, do we not see any number of cross-bred cows in our cities, thriving very well.

The Milk Problem .—The availability of milk sufficient for the needs of the cities and large towns is still not adequate either in quantity or quality. Much work has been done by the Co-operative Department, by organising Societies for the supply of milk, pooled from the rural areas. This probably causes a vicious circle, since the supply of milk for all people, both in urban and rural areas, is to be guaranteed. The villager in his desire to get money is ready to sell all the milk obtained from his animals keeping nothing for himself. Further, the health of the cows from which the milk is obtained, is not known. So to avoid these, it is very necessary to start Dairy Units in the neighbouring areas of large towns with funds

made available by the State to assure the supply of milk from known animals.

Conditions for launching such large scale concerns of milk production as in the recently started Milk Colony of Bombay, are not yet within reach in this Province. But the Municipal Bodies of large towns may take up the supply of milk, required in places where the existing conditions warrant this.

Contagious Diseases.—The incidence of Rinderpest and other contagious diseases is not on the increase, fortunately. Lapinised vaccine against Rinderpest is being tried on an experimental scale, at the Indian Veterinary Research Institute. The avianised vaccine favourably reported upon by the American workers, warrants a fair trial in Indian conditions. It will be a distinct improvement towards the eradication of Rinderpest to evolve some such vaccine.

John's Disease.—The slow incidence of this disease in our farms is a serious menace towards a rapid building up of the herds. The available diagnostic agents are not capable of spotting out the disease in its earlier stages. So much so, cases continue to be diagnosed with far advanced symptoms, resulting in their elimination by destruction. Even if early diagnosis were possible, we have no known treatment to cure affected animals or prevent animals from falling a prey to this disease. The one redeeming feature is that this is not communicable to man, like Tuberculosis. In already established farms, it is almost impossible to do anything since the infection would have been picked up by animals in their early life.

Parasitic Diseases.—In the absence of statistical evidence of the incidence of the several helminthic infestations, it is not possible to put down any one parasite, as particularly present in any area. The chief parasite of the young calf is the *Ascarid* worm which is easily treated and eliminated. With the advancement in age, the elimination of this worm by the host animal is almost assured. The sheep worms of any significance here constitute the *Haemonchus*, the *Fasciola* and the *Amphistome* groups. Incidence of immature Amphistomiasis, noticed in the previous years in our farms, appears to have receded to the back ground, probably by the active measures of snail eradication, favourably associated with the absence of heavy monsoon rains, resulting in inundation of pastures.

One remarkable feature, not to be lost sight of, in the tackling of helminthic problems, is the nutritional factor in the pastures and feeding of animals. It is never possible to completely eliminate all worms from an animal nor even desirable to do so. There is the normal worm burden for an animal which will be tolerated and will not indicate any anthelmintic treatment. This normal gets converted into an abnormal helminthiasis, with all its bad effects, with altered or deficient nutrition and fall below

par in general health. It is this that has to be prevented. Simultaneously with treating helminthic conditions, the general nutrition of affected animals must be attended to, if any beneficial results are to follow.

The Bovine Nasal Schistosomiasis is still a problem, the solution of which can only be brought about by an intensive drive towards snail eradication measures, in mass scales, in villages, side by side with treatment of diseased animals.

Bovine Surra is almost a counterpart of Rinderpest among the protozoon infections that require a thorough investigation. From already established results, it is seen that the only solution towards any success in the elimination of this disease, is the spotting out of the carrier animals (cattle and buffaloes) and subjecting them to known treatment in endemic areas. Simultaneously with this, the incidence of biting flies, in and around endemic Surra areas, must be tackled.

It is not possible to go into all the several other disease conditions of animals, within the time at our disposal nor will it be justifiable during the course of this report. They will be taken up during the discussions in professional meetings of the Conference.

I am sure I have said enough to indicate to the Hon'ble Minister and to you all about the several aspects of the development of Animal Husbandry problems. I do not consider for a moment that you are not aware of them but my aim in putting forth these is only with a view to focus more and better attention towards an achievement of results. Every one of the items touched upon needs a willing approach and a determined action, without which no useful purpose will be served by having one more Conference held and the usual reports and resolutions repeated.

Before I conclude, I would like to bring it to the notice of the delegates and other ladies and gentlemen congregated here that a few deviations have been effected in the features of this year's Conference. The exhibition that used to be arranged in one of the practical laboratory rooms, adjacent to this hall, has been given up, and all the different departments of the College are laid out with the exhibits pertaining to the different subjects and the entire staff are at the disposal of those who would like to step into the different departments to see the several exhibits.

A demonstration of artificial insemination is arranged for the benefit of those interested in witnessing this latest method of producing test-tube calves. Over 800 cows have been inseminated by this method in the college by a Special Officer.

Another new feature of this year is an exhibition of the best-kept milch cows, breeding bulls and calves born to cows artificially inseminated

as well as calves included in the calf subsidy scheme of the department. Being a new venture, this show of animals is meant to create enthusiasm in the matter of keeping cows in very good condition and also incidentally contribute towards an incentive and drive for producing more milk for the consumption of children and adults. It is also arranged to give prizes to the best animals as judged by a Committee. I am so very happy to record the great amount of response to our appeals, from several private persons and public bodies who have shown their munificence in such an unstinted manner. Let me express my deep sense of gratitude to all those philanthropic persons.

Gentlemen, I thank you for your very patient hearing and I crave your pardon if I have said anything not very agreeable to you as I can assure you that what I have said was said in the best interests of the Veterinary Science and its development to more and still more heights of glory. I now request the Hon'ble Minister to declare the conference open.

The Hon'ble Sri A. B. Shetty, Minister for Agriculture and Animal Husbandry, Government of Madras, then declared the conference open with the following speech :—

LADIES AND GENTLEMEN,

I am glad to have this opportunity of meeting you the members of the Veterinary Association and getting valuable suggestions from you. Government appreciate full well the good work which the Association has been doing for the last several years. These annual conferences help to focus attention on important problems and rouse popular interest in matters relating to your work. The present People's Government will certainly take due note of your opinions and feelings and you, in your turn, should give full co-operation to the Government in the work it has to do.

The question of increasing food production has received top priority of late. Agricultural production in this country is intimately bound up with the improvement of cattle. The improvement of nutrition also depends to a large extent on the increase of milk, meat and egg production. It is strange that the G. M. F. campaign has paid scant attention to the livestock aspect of food production. We have a large cattle population but a considerable proportion of them are unserviceable, useless and burdensome. In most parts of the country the cattle are non-descript. They are weak and puny, easily susceptible to diseases, especially epidemics. It is uneconomical to keep large numbers of aged, barren, diseased or disabled animals which form a big drain on the scanty fodder resources of the country.

Cattle Breeding.—We can improve the general condition of our cattle and increase their milk yield and working capacity by selective breeding. It has been estimated that 50,000 approved bulls suitable for

regional areas will be required to meet the needs of the province in this matter. The bulls which Government have at present distributed under the premium and other schemes are about 1,650. The annual supply of stud bulls from Government farms is too small to have any appreciable effect on the improvement of the breed of our cattle. There are 4 livestock breeding farms at present. Government have a post-war scheme for establishing livestock breeding farms in each district. Steps are being taken to open farms in Malabar, South Kanara and Kurnool. A Village Livestock Improvement scheme has been sanctioned for introduction in the first instance in 4 of the Firka Development centres in Guntur, Coimbatore, Bellary and Tanjore districts. A scheme for the grant of assistance to private breeders which has been under contemplation since 1945 will be brought into effect this year. This may help to encourage private enterprise in improving breeds of cattle. Artificial insemination is a method which can now be adopted to overcome the difficulty created by the shortage of approved breeding bulls. This work is being successfully done now at the Veterinary College and it has been decided to extend it to 2 more centres at Guntur and Coimbatore. Some of the bulls sent out from Government farms are found to be shy. They take a long time to function and sometimes they serve but rarely. Is this due to want of exercise, or improper feeding, or to their being tied up at a place with no opportunity for the sex instinct to be aroused by mixing with the village herd? This is a problem which requires investigation.

The Key Village Scheme.—It seems advisable to begin the attempt at raising the quality of stock in a few selected villages and gradually extend it to other villages. This conference may discuss the key village system which has been recommended by the Cattle Preservation and Development Committee. According to the existing practice, bulls are distributed to certain localities without any arrangement for compulsory segregation or castration of the adult males in that place, and prevention of promiscuous mating on common grazing grounds. When the progeny of an approved bull is served by a scrub bull, the improvement effected in one generation is nullified in the next. The Key Village Scheme is meant to remove this defect of the present system and ensure a concentrated and continuous plan of improvement. When the plan is developed and there is full breeding control, the key villages are expected to serve as economic cattle breeding farms. The present system of bull distribution has not been able to achieve any appreciable results. It may well be replaced by the Key Village Scheme.

The Importance of Nutrition.—Selective breeding alone cannot bring about improvement in the condition of our cattle. Proper feeding is equally, if not more, essential for this purpose. The large majority of our cattle are underfed and ill-nourished. Poor feeding brings about

deterioration in stature and stamina. When milch animals become dry they are neglected and left almost semi-starved. This often affects their yield of milk during their next lactation. The high percentage of mortality and morbidity in our cattle are due in a considerable measure to nutritional deficiencies. Animal nutrition studies have shown the importance of balanced feeding. Cattle food should contain both roughages and concentrates in proper proportions. Village cows put on Government farms have been found to improve remarkably and yield increased quantities of milk as the result of proper management and feeding. The production of fodder and cattle feeds deserves to be given high priority in our plan of food production. It is unfortunate that no effective steps have so far been taken to ensure adequate supply of concentrates like oil cakes and seeds at reasonable rates. We shall have to make fuller use of the forest grazing areas and grow on them fodder grasses. The Royal Commission on Agriculture have observed that small rations of silage fed to the hungry cows and young stock of the country during the season of fodder scarcity would do more than anything else to bring about a rapid change in the quality of our cattle. Our veterinary staff can do useful propaganda in this matter among the ryots and demonstrate to them methods of making hay and silage.

Disease control.—The control and eradication of cattle diseases must form a vital part of the problem of livestock improvement. Though there is lack of information regarding cattle mortality in our country, it is well known that epidemics of contagious diseases are widely prevalent. They kill a large number of animals every year. A still larger number are incapacitated by such diseases. One of the outstanding problems facing our veterinary department is the control of contagious diseases. The existing veterinary facilities for treatment and immunisation of cattle are limited. Our ryots do not fully avail themselves of even such aid as is obtainable on account of ignorance and poverty. Outbreaks of disease are not reported in time. We have not such elaborate legislation for effective control of contagious diseases as they have in several of the western countries. The methods which have been successfully adopted in the west are not practicable in the present circumstances in our country.

Veterinary facilities.—We have at present 144 veterinary hospitals and dispensaries and 169 touring veterinary assistant surgeons. If we have to provide on an average one veterinary assistant surgeon for every 25,000 heads of cattle, as laid down by the Agricultural Commission, we shall have to multiply our veterinary staff to 3 times its present number. On account of the shortage of qualified veterinary men, 46 of the sanctioned posts are being kept vacant and 8 of the retired officers have had to be recently re-employed. We have therefore to make an effective and economic use of the existing veterinary personnel. The touring days of the District

Veterinary Officers have been recently cut down from 120 to 90 days in a half year so that they may do more of professional work at the District Headquarters hospital. Touring veterinary assistant surgeons will shortly be made to curtail their touring work when there is no outbreak of contagious diseases to be attended to and facilities will be provided for them to run minor dispensaries when they are at headquarters. This change is being effected in accordance with the resolutions passed at your previous conferences and the recommendation made by the Provincial Livestock Improvement Board. The Veterinary and Livestock Inspectors who are having a two years' training course at Hosur will provide us additional hands to do a good deal of the field work such as castration, preventive inoculation, giving advice to the ryots on livestock matters and treating minor ailments.

Veterinary Education.—Extensions and improvements are being made in the Veterinary College and Hostel at a cost of about Rs. 1,60,000/-. An increased number of graduates will come out of the college from next year onwards and this will help to remove the existing shortage of veterinary personnel. When the Andhra Province is formed, another Veterinary College will soon be established there and this will help to extend veterinary facilities in both the separate parts of the province. The revival of the refresher course is under consideration. Facilities will have to be given to our veterinary graduates to take post-graduate courses and get higher qualifications here as well as in foreign countries. The research work done in western countries has been of great value. Compared with the work done there, veterinary research in our country has achieved but poor results. There are many unsolved problems. We must pay greater attention in future to the promotion of veterinary research. We shall have to develop the Institute at Ranipet into a first class Research Institute and arrange to manufacture there all the biological products required by the department.

Other matters.—The dairy industry needs development in our province. Co-operative organisations have taken up the work of milk supply to several towns and cities. A dairy-cum-breeding farm has been set up by Government at Waltair. An officer of the department has been sent to Northern India to buy Murrah buffaloes for this Farm. This is the first commercial dairy farm started by Government in this province. The improvement of the breeds of sheep and goats is also receiving attention. A Sheep and Goat Development Officer has been appointed for this purpose. A sheep farm has been opened in the Wenlock Downs near Ooty in December 1948. The Poultry Development Officer looks to the improvement of poultry. There are demonstration units in 30 of the veterinary institutions. 3 District Poultry Farms have been opened last year. The control of Ranikhet disease by the use of the recently discovered vaccine is expected to diminish the risks of poultry rearing.

Cattle Insurance.—Cattle insurance is a measure of far-reaching importance for cattle improvement. It is said to have made great headway

in foreign countries. There is no doubt that it would bring security to the cultivator and encourage cattle breeding and dairying industry in this country. Mr. Priolkar who has made a special study of this problem as an officer on special duty in the Central Minister of Agriculture, has mentioned the varied benefits of cattle insurance and also pointed out the difficulties in the way of its successful operation in this country. The ignorance and poverty of the average cattle owner in India is one of the formidable obstacles. The wide prevalence of contagious diseases and the limited facilities we have at present for effective or speedy control and treatment of such diseases is another great handicap. The attempts so far made to organise cattle insurance through co-operative societies in some of our provinces have not been sufficiently successful. It is considered advisable that Provincial Governments should undertake cattle insurance as an experiment in selected areas. Tracts where animals are of good value and where the cattle owners are economically well-off and better educated are recommended for trying pilot schemes. Insurance will have to be confined in the first instance to plough and draught cattle and dairy animals. When sufficient experience is gained, the scope of the scheme may be extended and its management entrusted to co-operative societies with such help from the Government as is found necessary. Crop failure and epidemic diseases of cattle are said to be the two major causes of rural indebtedness. Both crop insurance and cattle insurance will therefore be of special benefit to the cultivator in the present conditions obtaining in our country.

Conclusion.—It has to be admitted that the activities of the Animal Husbandry Department have so far touched but a fractional part of the province. We have to extend our sphere of work by employing more men and spending larger funds. But Government find themselves unable at present to take up any large schemes of development on account of financial stringency and the need for retrenchment both at the Centre and in the Provinces. The knowledge and experience gained by our veterinary officers is practically being lost to the country when they retire. They can be encouraged to set up private practice or do some useful work in connection with the various schemes which are being put forward from time to time.

You have done well in securing Sri Vinayaka Mudaliar to preside over this conference. He has done fine work as a responsible officer in the Animal Husbandry Department. Even after retirement his mature experience and valuable advice are being made available to us in his capacity as a member of the Provincial Livestock Improvement Board. I am glad to note that several of the veteran members of the profession who have retired from service are present here. There is no doubt you will have a successful session under their wise guidance. I have great pleasure in declaring your conference open and wishing you all a Happy New Year.

The President, Sri T. Vinayaka Mudaliar, then delivered his address to the conference.

THE HON'BLE MR. SHETTY, LADIES AND GENTLEMEN,

Permit me to express how deeply touched I feel at the call of my profession to preside over the deliberations of this Conference. It is an honour and a privilege, the greatest in the gift of the profession, which I shall cherish to the end of my days and I thank the members of my profession for the same.

My pleasure at presiding over this Conference is heightened by the fact that I am doing so in the presence of one, who has been taking an abiding interest in the welfare of our profession for over quarter of a century now. I need hardly say that I refer to the Hon'ble Mr. A. B. Shetty. If the good wishes of a grateful profession for the success of all his efforts in the service of our motherland should count for anything, I assure him he has them in plenty.

Ladies and Gentlemen, till recently such Conferences were looked upon as gatherings which met periodically to catalogue an endless list of grievances, real and imaginary, and to keep on like Oliver Twist, asking for more. Without going into the merits of such an opinion, I merely wish to draw your attention to the fact that with the dawn of Independence, the complex of such Conferences has completely changed. The Ruler and the Ruled being the same now, their outlook is the same, their urge is the same and their ultimate object is the same. We therefore meet here to-day, quite cheerful of heart and with the firm conviction that our view point will not be brushed aside with scant courtesy and that there is no need for us to follow the old policy of mendicancy to get anything useful done to our country. We meet here today as an Expert Body in our line to tender our collective wisdom in the service of our motherland and thus strengthen the hands of our National Government in their efforts to make India, a jewel amongst the nations of the world.

Food Scarcity.

Ladies and Gentlemen, it is no exaggeration to state that our country is in the throes of an economic distress, the like of which is unknown to recent history. What is even more un-paralleled are the gigantic efforts made by our Central Government and its various Provincial Units to keep the 350 and odd millions of our people fed and clothed. The magnitude of that task does not receive the credit it deserves in the midst of the prevailing scarcity. But it will go down in history as one of the top-ranking human endeavours ever undertaken to save millions of people from utter starvation and death. All honour to the men at the helm of affairs!

But it seems to be the common failing of great men that they swallow an elephant with ease but strain at a gnat. Our intellectual giants find it easy to solve the most intricate of international problems; but the food problem is baffling them. Perhaps that is because great ships can plough the high seas with ease, but cannot venture into shallow waters. They have to necessarily

depend upon smaller vessels, boats and even catamarans. But unfortunately this caravan of smaller vessels has not been properly organised all these years and all improvised attempts to save the situation at this time of emergency have proved disastrous. That I should think is the overall picture of our food situation.

Grow more Food Campaign-A Single Wheeled Cart.

But what makes us sad to reflect is that even at this late hour, the Government have not realised that they should include "produce more milk, more meat and more eggs" under the grow more food campaign. At present, the grow more food campaign is like a cart with one wheel. Progression is naturally not what it ought to be. Land and Livestock constitute the two wheels of that cart. But the other wheel is missing and yet the Government would persist in indulging in driving this single wheeled cart. Well, we can only say we wish them good luck!

Produce more milk, more meat and more eggs.

Ladies and Gentlemen, it breaks our heart to see high personages making special tours throughout the length and breadth of the land, laying out plans, setting up targets, fixing up time-limits, etc., and yet not speaking a word about more milk, more meat and more eggs. Can the present grow more food campaign be said to be complete then? What about the growing children—the citizens of to-morrow? the future custodians of the safety of our freedom? Will wheat, paddy, ragi and millets save them and make them the strong men we expect them to be? We preach quite a lot about protective foods on the wireless, from platforms, through information bulletins etc., but no attempt is made to make such food available easily and cheaply. Naturally the common man sneers at such propaganda. He sees clearly that beyond the routine departmental work, no intensive campaign is launched by the Government to provide milk at least to his babes and infants, expectant mothers and his aged and sickly parents. If the good name of the Government is to be retrieved, these articles of diet must also be included under the grow more food campaign and the needful done.

Plant Husbandry versus Animal Husbandry.

Perhaps these articles of diet have been eliminated from the Government list! If so, my submission is that the public have not been duly notified about it! Or, it may be the Government think that Plant Husbandry is more important than the Animal Husbandry. It is idle to attempt to solve the question whether Plant Husbandry is necessary for Animal Husbandry or vice-versa. There are extremists on both sides. We may as well try and answer the old conundrum whether the chicken produced the egg or the egg the chicken. Plant Husbandry and Animal Husbandry are complementary to each other and one cannot exist without the other, more particularly in a country like ours with small holdings, with no proper road communications, with no artificial manures and with no machinery.

Talk Less and Work More Campaign.

In this connection, may I also submit that it is high time the Government institute a "Talk less and work more campaign". These attractive paper schemes and the statistical bumper harvests that appear in the press from time to time only serve to increase our appetite in these hard days. The common man hears about them, runs home with great glee to find his rice-pot only half-filled and his brood of children crying for food. I say all these not to raise a laughter but to impress on all those concerned, be he an Agricultural man, a Veterinary man, Dairyman or a Farmer, how sacred is this task of growing more food at the present hour. Let us produce at least an ounce instead of talking a ton about production. He who betrays this trust is committing a crime against God, Man and Country.

Ladies and Gentlemen, I fear I have dealt with this subject of food production a little in detail. The importance of the subject at the present hour is my only excuse. Incidentally it also helps us to lay the flattering unction to our soul that we as a profession have done our duty in drawing the attention of the Government to the missing wheel of their apple cart.

Planning Required.

Let me now pass on to something more definite in way of our suggestions. An intensive campaign to produce better bullocks, better cows, better sheep and better poultry leading to more extended agriculture, more meat and more eggs needs to be planned and launched immediately to meet not merely the present shortage but to provide also for the increasing population. We must have an early start if we want to catch up this increasing population. It is going to be a tough race! Both a short term programme and a long term programme are necessary. I shall come to these presently.

Improve Quality of Cows.

Ladies and Gentlemen, you all know this land was once reputed to be flowing with milk and something sweeter also. We have no reason to doubt it, even judging from what little was available with ease, till recently. But one thing is certain. That reported copious flow of milk could not have been from the present day type of inferior grade cows. There were evidently high milk yielding strains, which probably have been indiscriminately mixed with draught type of animals, more through force of circumstances than through the oft-repeated calumny of the ignorance of the Indian ryot. He could not maintain one set of animals for his milk and another set for his agriculture. Between milk and plough bullock, he naturally preferred the plough bullock, a preference which even to this day persists in rural areas. To evolve a dual purpose animal of the required standard, was beyond his capacity and means. We must therefore improve the quality of our cows if we want more milk. That is the

basic truth to be remembered in this matter of producing more milk. Unless that is done, our milk problem will not be solved. It will remain with us in some form or other.

As to the ways and means of bringing about that improvement in the quality of our cows, it is hardly necessary for me to dilate upon them here. Those are matters of scientific detail which are best left to the experts in the line, who deem it a pleasure and a privilege to work with Nature to bring about such improvement in creation.

Milk Scarcity Partly Man-Made.

The next impediment that stands in the way of our getting a little more milk to-day, is the scarcity of cattle feed. At a time when the country has been clamouring for more milk, we have been feeding our cows on less ration! Can there be anything more incongruous? Instead of relieving the existing scarcity we have actually increased it by another 50% through lack of proper feeding. It has been established beyond doubt that the milk yield of cows could be increased by 50% or more through a properly balanced feeding. How much this would mean in these hard days, I leave it to you to imagine. And yet, the dairyman has no means of obtaining his cattle food easily and at reasonable price. On the other hand, much of the valuable oil-cake is thrown on the land as manure. We only plead that it may be allowed to be passed through the cow and the bullock. Any book on livestock will tell you that nearly 50% of the Nitrogen in-take and practically the whole of mineral in-take are voided by cattle. By this method both the livestock and the land are fed. We don't starve the one and feed the other. A higher state of production of the land is assured without encroaching upon the dietary of the livestock. To lessen one scarcity viz. cereals, we have been creating another scarcity viz. milk. I don't know what sort of balancing this economy is. It will be proper if we say that this scarcity of milk is partly man-made. If the Government cannot find their way to accept our proposal to give first priority to cattle in the matter of supply of these oil-cakes, we suggest that a Committee of Experts may be asked to go into the economics of this question and advise the Government.

Sir S. V. Ramamurthy while declaring open our Conference in 1944, has drawn pointed attention to the value of Agricultural and Livestock wealth. He said "Economists who have calculated Agricultural and Livestock wealth of nations, have found to the surprise perhaps of themselves and certainly of the public that Agriculture which occupies so much space does not produce as much wealth in the aggregate as Livestock which fills the eye much less. We have perhaps not recognised that the efficiency of production of wealth increases as we pass from plant to animal and thence to man".

Ladies and Gentlemen, the one trouble of the present century seems to be not that we do not have enough of accumulated scientific knowledge, but that we decline to utilise it for all good purposes.

We submit therefore that this partly man-made scarcity of milk must be removed at an early date on grounds of humanity, sound economy and national interest.

Short-Term Programme.

Ladies and Gentlemen, lest we as a profession should be thought to be indulging in vague generalities without putting up specific proposals before the Government to relieve the present shortage of milk, meat, eggs, better bullocks better cows, etc. I venture to give below a few proposals for the consideration of the Government. For obvious reasons, I can only be sketchy in an address like this. Under a short-term programme, the following items of work may be taken up.

1. 'Cattle food must be made available easily and cheaply. The present ration shops may be asked to sell cattle food also at controlled rates. If only this is done, the output of milk may be increased by nearly 50% as has been explained already.
2. Private Dairy Industry requires to be subsidised either in kind or cash. This proposal has been pending for years now before the Government. If something had been done by now, many would have expanded their trade and new dairies would have come up by now.
3. The Dairy Industry in rural areas is languishing for want of proper organisation. There are several milk pockets in the districts which require careful nursing and canalising. Creating a market, increases production in any trade and need not necessarily deprive the locality of this essential article of diet as is so often alleged, in way of cheap argument.
4. Controlled private enterprise to import good milch stock, both cows and buffaloes, for local sale from the surplus areas in North India should be encouraged, since we have no hope of getting any from Pakistan to whose share the cream of our milk breeds has gone viz the Sahiwal, the Sindhi, and the Tharparkar.
5. Mixed farming should be encouraged on all *small holdings* even. A loan for the purchase of cows may be advanced or some other form of incentive held out. A small land holder has not enough capital to invest on cows. Mixed farming will be a thorough success in his hands, if he is only given sufficient encouragement and guidance.
6. Back-yard poultrying and even dairying in bungalows with big compounds may be encouraged in the City of Madras and other big mofussil Cities, through subsidy and professional advice and guidance, on the same lines as the scheme for growing more vegetables.

7. The scheme for the salvage of dry cows should be expanded in the City of Madras and similar schemes introduced in other important Cities to save thousands of cows of breeding age from utter neglect during their dry period and possible slaughter, in spite of the Act now in force.
8. The output of Goat's milk wherever it is popular as in the West Coast, may be increased by importing suitable goats such as Surti, Beetal, Jamnapari and Nubian. Saanan and Toggenburg may be tried on hill stations.
9. Big residential Colleges with large acreage of land around them, or University Campuses in American phraseology, should be financed if necessary to start and run a dairy of their own, under the exclusive management and supervision of a qualified man. To that extent the off-take of milk from the general pool will be lessened, not to speak of the improved quality of milk that will be available to the student population of over 2000 at each centre.
10. The use of fresh milk in hotels and restaurants is prohibited in Bombay area. Instead, the Government have arranged for supply of skim milk powder. This step is said to have saved 700 maunds of fresh milk per day for essential domestic consumption. This step is worth considering and skim milk powder can be got from the Sterling area itself.
11. District Fodder Committees should be established to explore the possibilities of fodder production on cultivable waste lands; fodder conservation; building up of fodder reserve for each district and distribution of fodder during times of scarcity in particular areas. It is said nearly 30% of waste can be saved if all the fodder is chaffed and fed. These Committees can popularise such ideas and arrange for cheap chaff-cutting machines.
12. Protection of poultry against Ranikhet disease on a mass scale may be undertaken by having a small mobile unit for each district. A scheme is urgently called for to save poultry industry from what was till now a source of utter ruin.

Long-Term Programme.

Under a long-term programme, the following items of work may be planned and given effect to :—

1. Artificial Insemination of cows from highly pedigreed bulls should be pushed through. This work has come to stay in this country. It is very popular in Bangalore. I expect it is so in Madras also. Here is a direct, short and cheap method of improving the quality of cows of

the next generation. The benefit of this highly potential scheme can be reaped in 5 or 6 years' time. The yield of milk in the improved cows of the next generation can be roughly said to increase from 100 to 300% at a very modest estimate. More and more units of artificial insemination should be opened not only in Cities but in rural areas also under a well conceived plan.

2. The key village scheme which has been pending before the Government for over 3 years now, may be adopted. This is a scheme recommended by the Indian Council of Agricultural Research. It is a scheme for concentrating breeding work in a limited area continuously for a number of years and utilising that area after sometime for drawing improved breeding bulls for distribution to other areas. In other words, it is a sort of a liaison livestock farm, which will serve as a seed depot for distribution of bulls and incidentally also for producing better cows. This avoids the necessity of Government opening more and more livestock farms at great cost. If there is any doubt as to the beneficial effects of such concentrated breeding work, one has to merely visit the Anamalai Hills in Coimbatore District. What was once a heterogeneous herd of cattle of variegated colours, different sizes and of doubtful quality, has now been graded up to Sindhi standard with remarkable success.
3. The third item under this Long-range policy is the opening of more and more Livestock Farms on a regional basis at least, if not district-war. Personally, I think it is cheaper and more rational to divide this presidency into regions or zones based on the similarity of conditions and breeds of cattle and sheep and open Central Farms for each zone. Separate farms for sheep, goats and poultry are to be preferred as they will receive better attention and more concentrated work can be done on them.
4. Cattle Breeders of approved merit and status must be recognised and licensed. Superior bulls amongst their production must be ear-marked by the Government for breeding work elsewhere. They should be given grazing and irrigation facilities wherever possible and also subsidy in the form of cattle food and fodder. All the latest knowledge in animal genetics must be made available to them in the form of free professional advice and guidance.
5. A Provincial Milk Board may be constituted to devise methods and means of increasing milk production, milk marketing, fodder production, etc.
6. A scheme like the Bombay Milk Scheme at Aarey for the City of Madras, with suitable alterations to suit local conditions, may be planned by a committee of experts of both officials and non-officials.

7. The ryots should be encouraged to grow fodder in a part of their land, either through remission of part of the tax or through some other form of subsidy. Besides encouraging mixed farming, this will slowly bring about the much needed change in some of the Agricultural practices also.

Idare say many more such schemes must suggest themselves to Departmental Officers. What is required is the realisation on the part of the Government of the urgent nature of such schemes and sanctioning them without delay.

The Aboriginal Tribes and Their Cattle.

In this connection my mind travels to the few aboriginal tribes we have in this Presidency and who mainly thrive on cattle industry viz. the Todas, the Chenchus and the Sugalis. Certain schemes were introduced a few years ago for the improvement of their cattle with remarkable success. They have been paying high dividends to these people in way of improved calves and fetching much higher price than what they used to get. But all these schemes seem to be stagnating for lack of further expansion and continuity of policy. Other Tandas than the one at Panyam in Kurnool District should be supplied with suitable stud bulls at least. If there is one place where artificial insemination could be tried on a mass scale in mofussil areas, it is in the Tandas of Sugalis, where we find cows numbering anywhere between two to four thousand in each Tanda or colony. The Pentas of Nallamalai hills are perhaps another tract where the Artificial Insemination could be thought of.

The Todas are essentially a pastoral community. They will respond to development better on those lines than to try and make them a hard-working agricultural community over-night. This latter method was tried several times before, if I remember right, but always proved unsuccessful. I do not know if conditions have changed now. The Chenchus have got beautiful herds of cattle in those forest depths of Nallamalai hills. They deserve encouragement.

These are the several fields of work which are open for improving the national wealth and health, through livestock.

A Livestock Survey is Necessary.

Ladies and Gentlemen, the Livestock wealth of our land lies buried for lack of men, money, materials and a will to un-earth it and make it benefit the country. The most fundamental thing for scientific development of any work, is a correct knowledge of the existing state of affairs and then planning on modern lines with such alterations and adjustments as are required to suit the genius of the people. During war time we were pestered with enquiries with regard to data pertaining to different classes of livestock including ducks, rabbits and pigs. We had no data worth the name. A comprehensive survey of live-

stock, livestock trade, livestock industry, livestock products, etc., district-war, appears to me to be highly necessary to base all further planning and for statistical purposes also to keep watch on the progress made or otherwise, from time to time. An authoritative publication is highly necessary and I only hope both the Department and the Government will take early steps on this important matter.

College Expansion.

Ladies and Gentlemen, you have heard it from the Chairman of the Reception Committee, how ill-equipped is this College at present in the matter of accommodation, equipment and staff, to cope with its ever expanding work. Let it be remembered that this is the fountain head of all our livestock and veterinary work. If it is defective in any respect, the whole service is bound to be defective. The crying need of the college is more accommodation, more equipment and more staff. We cannot be too grateful to our present Minister who is looking into these things personally and speeding up matters. But our only prayer is that the speed must be accelerated. For we have already lost much time, not only, through lack of timely support from the Government all these years, but also through a lamentable lack of imagination on our own part.

The post-graduate course, which was so beneficial to the members of the profession in the past, should be revived at this College, as it is an essential adjunct to any modern scheme of professional advancement. There is no room for a second thought over it and we only hope it will be re-started from New Year onwards.

Disease Problems and A Central Research Institute.

A Central Veterinary Research Institute for this Presidency is long over due. Many of our men have gone to foreign lands and have come back with high academic qualifications that will fit them well for higher research. It would be a waste of national wealth if these officers are allotted to do the routine jobs of the department and are asked to shed their fragrance in the desert air (if I may adapt a little the famous lines). They should be given facilities and status to still further raise the standard of education here and train up people for higher research. The present Veterinary Biological and Research Institute now located at Ranipet, till recently known as the Serum Institute, should either be converted into a first class Research Institute or a new one opened. I personally feel that a small committee of research men drawn from the other parts of India also, should be asked to go into this question and report before any final decision is taken. Until then, the present Institute under its new denomination should be asked to shoulder this work for the interim period. But its staff should be strengthened with men best suited for such work. This is a matter of utmost national urgency which cannot brook delay; for there are many problems of diseases of cattle, sheep and poultry which have not been touched at all in the

absence of such an Institute. To mention only a few, the Nutritional Pathology is yet a sealed book to us. Diseases like Sterility, Contagious Abortion, Amphistomiasis, Rinderpest, Haemorrhagic Septicaemia, Fowl-pox, etc., present various phases which baffle the skill of the most experienced practitioners even. The parasitic diseases of our livestock is yet another field which remains unexplored to this day. The control, if not complete eradication of some of our major contagious diseases of cattle which claim such a heavy toll every year leaves much to be desired in way of Research. New sources of food supply for cattle require to be explored also. All these problems cannot be properly tackled without the aid of a first class Research Institute in this presidency.

No doubt we want first rate men for all such work and as our Prime Minister has said there should be no room for second rate men, where higher research is concerned. Given facilities, opportunities and encouragement, some of our young men will certainly prove equal to the task. It is this fact that often fails to catch the eye of the administrators and they imagine that talent is found any where else excepting in their own department! Science is like a huge army on its march. Its efficiency and success depend on the co-ordinated advancement of all its branches. This Research branch needs immediate development in our line.

Paucity of Men and How to Solve it.

Ladies and Gentlemen, it is so easy to play the role of a critic and to prescribe lines of action and indicate schemes; but it is quite another thing to run them. The two factors that hamper all progress are the lack of men and money. It is for the Government to find the money part of it. But it is up to us to say how to meet the paucity of men. There is an acute shortage of trained personnel in the Animal Husbandry Department. We have started very late to produce more Veterinary Surgeons. We are just engaged in an academic discussion on the feasibility of opening a second Veterinary College in a big presidency like this when countries much smaller than this presidency, even taking into consideration the conditions that vary, are having three and four Veterinary Colleges and when in this very same presidency the professions of Medicine, Agriculture, Engineering and Technology have been multiplying their Colleges. Our profession has been singularly unfortunate in the matter of bold leadership and guidance though I must admit without reserve, conscientious work and honesty of purpose have never been lacking. There is no good of our looking back and crying over the opportunities lost or time wasted. What is now required is to conserve the few personnel still available with us to the maximum extent possible. Schemes are put off for lack of men; billets are closed for lack of men; offers of opportunities to serve in fields legitimately belonging to the Animal Husbandry Department are declined for lack of men. It is a sad tale and reflects badly on the Department. All the while the country suffers for want of development; for want of progress.

It is for the present People's Government not only to open a second Veterinary College but also to evolve a scheme whereby the deserving young men of the department should not lose their chances of promotion and yet the retiring men, if they are otherwise fit, may be usefully re-employed on some scheme or other. It is a waste of the first magnitude to throw away what little technical skill that is available in our land without utilising it to the utmost, more particularly at a time when development schemes are lying on our hands and there are not enough number of men to be put on them. Practical wisdom suggests such a course in the interest of our country.

I have chosen to speak rather plainly on this delicate subject only in the interest of the country at large and our profession in general. I submit, with all emphasis I can command, I have nobody's interest in view either retiring or retired. India needs men, more men and more men technically qualified to develop her various professions. If what we profess is genuine, let us put the country before everything else. Human resourcefulness has not become so bankrupt as not to be able to evolve a suitable scheme on this knotty question, without affecting the men in service. Otherwise it looks to me as a serious lack of vision to throw away so much of experience and talent on the scrap heap, more particularly during this period of transition when we have to settle down quietly, for some serious work.

Another method of meeting this shortage of personnel is perhaps by utilising the cheaper agency of Veterinary Inspectors who are coming up, for all routine items of work of the Department and relieving the highly qualified Veterinary Assistant Surgeons for more important items of work.

A third method that suggests itself to me is that the touring billets may be made into a compact mobile motorised unit for each district, of one Veterinary Assistant Surgeon with a number of Veterinary Inspectors under him and the remaining 7, 8 in each district or even 10 Veterinary Assistant Surgeons in certain districts, may be switched on to other items of work.

It is no use of our sitting with folded hands saying all the time we have no men, we have no men. I have never known another case where necessity has failed to mother an invention or devise a method.

The Future Director of Animal Husbandry.

One other subject that has been agitating the mind of our profession of late is the question of a successor to Mr. Hurley, when he retires early in 1950. We are not concerned with individuals. But as a matter of high policy, the profession would like to have a Veterinarian as its head. It is a highly technical profession, comparable only with human medicine in its scientific intricacies and any non-veterinarian will find it impossible to do justice to that high office. These are not days when we can tolerate a policy of drift or allow only routine management of the department, without big steps being taken. The profession

has to forge ahead at a fairly good speed to make up for the loss of time during the foreign domination. The profession is pulsating with a new life and they want to work and work under an able and enlightened *professional* guidance. *It is only then complete co-operation will be assured.* In saying this we only try to be wise before the event and not after it. There is no good of Government creating a problem and then trying to find a solution for it.

There is a wealth of talent within the profession itself, which should be made full use of. Men with very high academic qualifications of both Indian and foreign Universities are available within the profession and men of high character and experience are also available to choose from. Let it be remembered experience comes through experience and not otherwise. There is no paucity of suitable Veterinary men for this high office. That is our general request to the Government on this important matter.

Medium of Instruction.

Ladies and Gentlemen, perhaps at a Conference like this it is well for us to express what we think should be the medium of instruction of Veterinary Science in our college in future. The wise people of the Universities have already indicated the right course. We can only say that the best interests of the country and of the science will be served by continuing the present medium of instruction. Mr. K. M. Munshi in his Convocation address at the Benares University touched on this vexed question with a boldness and sincerity, so characteristic of our top-ranking leaders. He said "This great language (English) has become ours by historic necessity. It is at present the effective language of scholarship and national consolidation. It is a world language which no longer is foreign and belongs to us as much as to all other English speaking nations" That is practical wisdom unpolluted by sentiments or false prestige.

Government Thanked.

I take this opportunity to thank the Government for the recognition they have accorded to the Madras Veterinary Association and for the representation they have given for that body on the Provincial Livestock Improvement Board. It shall be our earnest endeavour to co-operate with the Government to the best of our ability.

Exhortation.

Let me now finish my address with an appeal to my young friends of the profession. Friends! Please realise that it is your privilege to serve in a free India. Your opportunities are great indeed. It is you, who will be held responsible for putting up India on the map of the Veterinary World. Others can't do it, however great they might be in other walks of life. If you fail to keep pace with other developments in our country, you will be marked and the country will scorn you. Remember, every good act of yours as a professional man,

benefits the common man and every advance made in our science does not go to swell the coffers of industrial magnates but to help the common man. It is a rare privilege indeed to be associated with such work.

Remember also, planning is not production. It is not an end by itself. Schemes may be drawn, plans may be laid and funds may be sanctioned, but the success or failure of all such national efforts depend on the men who actually deliver the goods. So, on you will depend the good name of our profession and the future of our country on all Animal Husbandry matters.

I cannot do better than draw your attention to what Dr. Rajendra Prasad has said recently. He has asked us to have as our motto "Work and more work". He further said "All around me, whether in factory or field, village or city, I find a tendency to idle away time. This is really deplorable, when we have as our chief one of the most hard worked individual in the world, whose life can be our greatest source of inspiration."

Burning words are those, fit to be preserved in our hearts in letters of gold. Jai Hind.

Sri S. V. Mudaliar then requested the Hon'ble Minister to present the Panikkar Memorial Medal to Sri Gursaran Lal and, in doing so, gave an account of the institution of the medal. As the student was away from Madras, it was presented *in absentia*.

Messages wishing the conference success received from the following gentlemen were read by the Chairman of the Reception Committee:—

- | | |
|--|------------------------------|
| 1. Hon'ble Premier of Madras | 10. Mr. F. S. David |
| 2. Hon'ble M. Bhaktavatsalam | 11. Sri R. Narayana Reddy |
| 3. Sri P. S. Viswanatha Iyer | 12. Jeewanhal Ltd. |
| 4. Pattagar of Palayakottai | 13. Burroughs Wellcome & Co. |
| 5. Sri M. Anantanarayana Rao | 14. Sri P. Ponnuswami Pillai |
| 6. Mr. D. John | 15. „ M. Hanumantha Rao |
| 7. Bombay Veterinary Medical Association | 16. „ R. B. Sarma |
| 8. Mr. Shott | 17. „ R. Venkatakrishnan |
| 9. Mr. Mallik | 18. „ P. Subramanian |
| | 19. „ V. P. Menon |

A vote of thanks was proposed by Sri G. Venkataratnam, Secretary of the Association.

The gathering then adjourned to the Cattle Show, which was a notable feature of this year's conference. It was declared open by the Hon'ble Minister, who went round the show evincing keen interest and appreciation of well-kept cows, bulls and calves. As many as 168 animals were exhibited. The following groups of cattle were represented at the show.

A. COWS		NUMBER
1. Scindhi cows	...	8
2. Ongole cows	...	30
3. Cross-bred cows	...	48
B. Bulls		
1. Scindhi bulls	...	2
2. Ongole bulls	...	3
3. Cross-bred bulls	...	16
C. Calves		
1. Test tube calves	...	11
2. Subsidy calves	...	50
Total in all classes		168

The "test tube" calves attracted much attention.

There were also stalls of Messrs. May & Baker (India) Ltd. and the I. C. I. (India) Ltd., with their valuable exhibits connected with the latest advances in various pharmaceutical preparations and which attracted the attention of the members of the profession.

The delegates reassembled at 12 noon and elected the Subjects Committee to consider the various resolutions to be placed before the general body. The meeting then adjourned for lunch.

In the evening the Hon'ble Minister for Agriculture gave a Tea-Party to the President and Delegates of the Conference, which was very much appreciated, as a pleasing gesture of the present People's Government towards the services in general. Some of the elite of the City were also present on special invitation.

There was pin-drop silence when the President of the conference got up to thank the Hon'ble Minister on behalf of the delegates. He said:—

Ladies and gentlemen, "I rise to thank the Hon'ble Minister for this extremely graceful act of meeting the Delegates at Tea today, which, I feel sure, will be very much appreciated by the entire profession in this presidency. That is a proof again, if proof were needed, of his great love for our profession.

In Life's arithmetic, nothing plus nothing sometimes amount to something! I hope I am not outraging the feelings of mathematicians that may be present here, by this gross statement of mine! But it is a fact, that such acts, nothing by themselves, such human understanding, such human touch, that go a long way in the scheme of things to make this world yet a pleasant spot to live in.

So, I thank you, Sir, on behalf of myself and on behalf of the Delegates, for this excellent Tea you have given us and for the opportunity extended to meet us in this informal manner, in your presence and company. (*Loud Cheers*).

After tea the gathering adjourned to the gaily decorated shamiana in the cattle show grounds. Sri S. V. Mudaliar, Chairman of the Reception Committee, presented the following report of the cattle show before prize distribution that evening.

Hon'ble Minister, Srimathi Kuttimalu Amma, Generous Donors Distinguished guests and colleagues,

On behalf of the Reception Committee, I deem it a great pleasure to present this short report about the cattle show. The organisation of this show is a land-mark in the activities of the Association and it is the first of its kind in the city. It was not without anxiety we took up this colossal task but we were encouraged by the generous response we had from the philanthropic individuals and bodies interested in the welfare of cattle. As it is our first venture in the city, we were not quite sure about the response from the livestock owners interested in exhibiting their animals at the show. We made a small beginning and slowly we began to feel the enormous enthusiasm of the cattle owners and hence we began to expand our activities. The net result of it is the show which you have all witnessed, about which this Association can justly feel proud of. The total number of animals exhibited is 168.

The whole responsibility for the success of the show falls on those who were quick to respond to our call for donations. The Director of Animal Husbandry was kind enough to award the Government grant for this one-day cattle show. Majority of the donors presented attractive cups, while some remitted cash amounts ear-marked for prizes. But for a show of this kind an equal amount is required for the organisation itself. We have not yet been able to cover completely that item of expenditure and we still hope for cash donations from philanthropic gentlemen, so that we may be encouraged to continue these shows regularly, of course, in a more elaborate scale as part of our Annual Conferences.

The Reception Committee elected a small sub-committee for organising the cattle show. The following formed the sub-committee:

- | | |
|---|------------------------|
| 1. Sri V. S. Alwar (<i>Convenor.</i>) | 5. Sri Balasundaradas |
| 2. „ K. S. Nair. | 6. „ John. |
| 3. „ U. K. Menon. | 7. „ V. Rayappa Reddi. |
| 4. „ P. Thillanayagam. | |

With great pleasure and gratitude, I thank the following donors who have liberally contributed for the success of the show.

- | | |
|-----------------------------------|--|
| 1. The Madras Pinjarapole. | 13. Suran & Co. |
| 2. The S. P. C. A. | 14. The Madras Race Club |
| 3. Sri Bhandari. | 15. The Sunbeam Surgicals |
| 4. „ Surajmal Dholchand. | 16. M/S. Lawson & Toubro. |
| 5. „ Manmul Khardia. | 17. Donations are still expected from bodies like Corporation of Madras. |
| 6. „ Dadha. | 18. Co-operative Milk Supply Union. |
| 7. Messrs. Wilfred Pereira. | 19. Provincial Co-operative Bank. |
| 8. Sri C. M. Sharma. | 20. Chinnasamy Naidu. |
| 9. Mrs. Manickam. | |
| 10. Sri Agarwala. | |
| 11. Mr. Mathews. | |
| 12. The Scientific Instrument Co. | |

The following were kind enough to act as Judges for the Cattle Show:—

- | | |
|-----------------------------|-----------------------|
| 1. Sri Radhakrishna Pillai. | 4. Dr. Venkatachalam |
| 2. Major T. Murari. | 5. Sri Krishna Rao |
| 3. Mr. Bertie A. D' Souza. | 6. „ P. Thillanayagam |

Srimathi K. Kuttimaluamma then gave away the prizes. The following were the recipients.

List of prize winners in cattle show

Breed	Class	Donor	Winner
<i>Ongole</i>			
	1. Best cow I	Sri C. M. Sharma	Sri Dewaraja Pillai
	2. Best cow II		Sri Kuppuswamy Mudaliar
	3. Best milker	Sunbeam Surgical	Sri Venu Naidu
<i>Scindhi</i>			
	4. Best cow I	Mrs. Manickam	Madras Race Club
	5. Best cow II		Carnbuck Club Dairy
	6. Best milker	Messrs. Wilfred Pereira	Dr. Iswaran
<i>Cross-bred</i>			
	7. Best cow I	Mr. Mathews	Sri Mangali Pillai
	8. Best cow II		„ Devaraja Pillai
	9. Best milker	Messrs. Suren & Co.	„ K. Doraiswami Pillai
	10. Best cow in the show.	Pinjarapole	K. Mangali Pillai
	11. Best milker in the show.	Larsen & Toubro	K. Doraiswami Pillai
Bulls			
	11. Champion bull I (Ongole)	Sri Chinnaswami Naidu	Corporation of Madras
	12. Scindhi bull II	S.P.C.A.	B. & C. Mills
	13. Cross-bred bull	S.P.C.A.	Sri Mangali Pillai

Calves

Subsidy scheme calves

14. Ongole calf I

Sri K. Govinda
Swamy Naidu
„ Tulasingam

15. Crossbred calf II

Test tube calves

16. I

„ K. S. Narayana Iyer

17. II

„ Thirumalai
Iyengar

Consolation prizes donated by

Mr. Chellam

„ Gajapathi Naidu

Dr. Venkatachalam

Deaf and Dumb

School

Sri V. S. Alwar, Secretary of the conference, proposed a vote of thanks to the gathering after the prize distribution.

The subjects committee met at 6-30 P.M. and adjourned at 8-30 P.M.

Second day, December 27th, 1949

The proceedings commenced at 1 P.M. in the Central Hall, with Sri T. Vinayaka Mudaliar in the chair. The day was devoted for professional discussions.

Mr. T. J. Hurley initiated a discussion on "The incidence and control measures for Haemorrhagic Septicaemia in the province."

Sri K. S. Nair initiated a discussion on "The progress of breeding operations among cattle and sheep in the province."

Sri S. V. Mudaliar initiated a discussion on "Control measures against parasites (helminths) in animals and birds."

Sri M. N. Menon initiated a discussion on "Ways and means of increasing milk production in the province."

A lively discussion ensued and several members took part in the discussion.

Before adjourning for Tea, Mr. Hurley got up to take leave of the Delegates and said that he might not be able to attend the conference the next day.

The President of the Conference then made a feeling reference to the impending departure of Mr. Hurley on retirement. He said :—

Genetlemen, perhaps this is the last Conference which Mr. Hurley is attending in Madras, the field of his activities for the last 25 years or more and I take this opportunity as President of this Conference to thank Mr. Hurley for

his close co-operation during this session. It may not be out of place if I tell him how deeply his departure from our midst will be felt by the profession. I do not know if he can understand Indian feelings and Indian character. Even the smallest bit of service done to us is never lost on us. We imbibe with our mother's milk and begin to lisp in our childhood that there is cure for everything but ingratitude. That is our cradle-lesson. It is said of Rama, the Hindu ideal of manhood, that he would forget with sunset thousand and one wrongs done to him in the course of the day, but not one single act of kindness or of devoted service! That is our culture; that is our civilisation; that is our up-bringing. It is that hat has reflected in our ties with Britain today. All our sufferings at her hands are forgotten but only her virtues are remembered and appreciated and we continue as the best of friends.

So, I say, Sir, we might not have been able to see eye to eye with you on many matters. But, your character, your high sense of duty and your admirable hard work, will be long continued to be remembered by us. At the moment, as President of this Conference, I thank you for all your services for the profession and our country" (*Prolonged cheers*).

In the evening, Sri K. Seshachalam Choudary, Asst. Director (Planning) and Honorary professor of leather technology, Central Leather Research Institute, Madras, delivered an interesting address on "Animals and their hides."

The conference adjourned at 6 P.M.

The subjects committee met at 6-30 P.M. and adjourned at 11 P.M.

Third day, December 28th, 1949

The proceedings commenced at 8 A.M. with Sri T. Vinayaka Mudaliar in the Chair. The discussion on professional papers was continued. Sri K. Govinda Sastry initiated a discussion on "The Ranikhet disease and its control" and was followed by several members who evinced a keen interest in the discussion on the subject.

The following professional papers were taken as read.

- (1) Studies on fertility in the bovine male by Sri C. Krishna Rao, M.Sc.
- (2) An outbreak of Amphistomiasis among cattle in Nellore District by Sri P. Ramakrishna Pillai, G.M.V.C.

The Annual General Body Meeting of the Madras Veterinary Association then commenced at 10 A.M. Eighty five members were present.

Sri G. Venkataratnam, Secretary of the association presented the following report of the managing committee for the period from 25-9-48 to 25-12-49 with a statement of accounts from 1-1-48 to 20-12-49.

The 8th Provincial Veterinary Conference was held under the auspices of the Association in September, 1948, with Sri R. Swaminathan as President. The Hon'ble Sri K. Madhava Menon, Minister for Agriculture, Government of Madras, inaugurated the Conference. An exhibition was also arranged in that connection which was opened by Srimathi Kuttimalu

Amma, M.L.A. The Conference was a great success and was attended by 59 Delegates, who evinced keen interest in the deliberations of the Conference. Professional papers were presented and interesting discussions ensued. A new feature of the Conference was a professional discussion on livestock development in the Province initiated by Dr. K. S. Nair. The various resolutions passed at the Conference were submitted to Government with necessary explanatory notes.

2. Sri K. Kailasam Ayyar was elected as the President of the Association at the Annual General Body meeting and the Managing Committee regret to record the demise of Sir K. Kailasam Ayyar in March, 1949. Sri R. Swaminathan, B.A. G.M.V.C., was elected as the President at an extraordinary General Body Meeting held on 13.8.1949. Twenty-three members attended the meeting. Sri G. Venkataratnam was elected as the Secretary and Sri P. Srinivasan as the Treasurer.

3. **Membership:**—The number of members on the rolls on 24.9.1948 was 132. (107 ordinary, and 25 life-members). During the period under report, 2 died, 18 ceased to be members, 9 enrolled as ordinary members, 2 enrolled as life-members. Total number on rolls to-day is 123 (ordinary 96 and 27 life members).

4. **Meeting:**—The Managing Committee met 11 times during the year. The Association conducted a Provincial Veterinary Conference during September 1948. An extraordinary General Body meeting was held in August, 1949 to elect the President. The Managing Committee from time to time considered various resolutions, submitted memoranda on some important and urgent matters to Government and also took steps to implement those that were passed during the previous meetings.

Other activities:—

1. Steps were taken to institute a suitable memorial in memory of the late Sri K. Kailasam Ayyar. A sub-committee was constituted to collect funds with Sri G. R. Viswanathan as the Chairman.

2. Government have acceded to the request of the Association for representation on the Provincial Livestock Improvement Board. Sri T. Vinayaka Mudaliar was nominated as its representative.

3. The Association participated in the Silver Jubilee Celebrations of the *Indian Veterinary Journal*.

4. A memorandum was submitted to the Government on the question of improving the status, prospects and designation of the staff of the Madras Veterinary College and their reply is awaited.

5. The Director of Animal Husbandry requested the opinion of the Association on a Government Memorandum suggesting the granting of a Diploma to the students of the Final B. V. Sc. at the end of their

Fourth Year of training. The Managing Committee, disagreeing with the proposal, forwarded a detailed explanation on the subject.

6. A special report was submitted to Government on the question of starting immediately a Veterinary College at Vishakapatnam and for the creation of the post of a Special Officer for the same, as one of the consequential arrangements in connection with the formation of the Andhra Province.

7. The holding of an one-day Cattle Show this year is one of the outstanding features of the arrangements made in connection with the 9th Provincial Veterinary Conference.

8. Dr. I. M. Azizuddin audited the accounts of the Association this year and the statement of Receipts and Charges is appended.

9. The Managing Committee wishes to place on record its appreciation of the co-operation and facilities afforded by the Principal, Madras Veterinary College, for the working of the Association in the College and also the helpful attitude shown by the Editor, *Indian Veterinary Journal*.

Statement of accounts from 1-1-1948 to 20-12-1949.

RECEIPTS.		CHARGES.	
	Rs. a. p.		Rs. a. p.
By opening Bank balance	440 7 0	Towards boarding of members during last conference (188-8-6),	
" Cash on hand	59 14 11	Tea at Reception, (14/-) Exhibition and	
Last year's Conference Receipts:		Managing Committee	
Reception Committee and Delegate fees	156 0 0	Meetings (69-13-0) and party to Sri S. V. Mudaliar (113-4-0)	385 9 6
Subscription	189 0 0	To expenditure for Conference towards advertisement, furniture, invitations, garlands, decorations, milk, etc.	253 12 0
Donation	97 0 0	Excess paid on Panikkar Memorial Fund	0 12 6
Interest for 1947-1948	5 0 0	Stationery, postage, stamps	41 10 6
" 1948-1949	6 14 0	To typists, etc.	50 0 0
By Interest from Accountant General towards investment of Panikkar Memorial Fund for 1947 and 1948	55 13 0	Cost of reprints of proceedings of last Conference	60 15 0
Kailasam Ayyar Memorial Fund	34 0 0	Advance to this year's Conference	100 0 0
		Bank balance	151 5 0
		Cash on hand	0 0 5
Total.	1,044 0 11	Total	1,044 0 11

SRI K. S. NAIR moved the adoption of the report.

SRI V. S. ALWAR seconded it.

Carried unanimously.

The following resolutions were then passed by the conference.

1. This Conference places on record its deep sense of sorrow at the sad demise of the following members of the profession and conveys its heart-felt sympathy to the bereaved families:

- (a) Sri K. Kailasamier,
- (b) .. K. P. Duraiswami,
- (c) .. M. Ponnayya. (Moved by the Chair).

In moving the above resolution, the President spoke as follows:—

Gentlemen,

As occupant of this chair, it is my melancholy privilege to place before you a resolution on the sad demise of some of our eminent professional colleagues. The list before me makes me very sad indeed. I see in it names of persons who were pioneers in our profession and who helped to lay the foundations on which we stand today with such glory and triumph. How can the profession afford to forget them? No one can deprive them of the applause of the posterity. Memories of the past come crowding to me when I see those names on this list; but I shall not make your grief more poignant by narrating such reminiscences. I submit, therefore, this resolution for your acceptance and I request you to pass it with all the respect and dignity due to the departed.

Carried unanimously all standing.

2. This Conference is of opinion that the time has come to open a second Veterinary College in this province and requests the Government to take early steps in the matter.

3. This Conference requests the Government to open Artificial Insemination Centres at each of the District Head Quarters institutions and other suitable centres such as the Pentas in Nallamalai hills and the Tandas of the Sugalis at an early date.

4. This Conference is of opinion that a scheme on the model of the subsidised rural medical practitioners be adopted for the veterinary profession also and a subsidy of Rs. 1,200/- per annum be granted to each qualified veterinary practitioner.

5. This Conference recommends that, in the proposed revision of the syllabus of the Madras Veterinary College, subjects like Rural Economy, Marketing and Propaganda be included for the B.V.Sc. Degree.

6. This Conference is of opinion that the Board of Studies in Veterinary Science and the various Boards of Examiners for the B.V.Sc. Degree should consist only of the members of the veterinary profession.

7. This Conference requests the Government to reorganise and continue the only co-operative Cattle Breeding Society in this province, viz. The Kangayam Cattle Breeding and Marketing Society, and take early steps to form such Societies for other breeds of cattle also in this presidency.

8. This Conference requests the Government to amend the existing statutory qualification for all posts in the Madras Animal Husbandry Service so that only persons with basic qualification in veterinary science are eligible for such posts.

9. This Conference requests the Government to institute Cattle Insurance system in this presidency.

10. This Conference recommends to Government that a scheme of livestock improvement suited for rural parts be taken up immediately and the key-village scheme started in as many areas as practicable.

11. This Conference requests the Government to nominate the Director of Animal Husbandry as an ex-officio member of the Corporation of Madras.

12. With a view to maintain the high standard of teaching at the Madras Veterinary College, this conference recommends to Government that suitable statutory rules be framed for the teaching staff and recruitment made accordingly.

13. This Conference requests Government that, in view of the fact that there are many permanent posts kept vacant in the department, persons still kept on a temporary basis even after completing their probation, be made permanent.

14. This Conference requests the Government to treat the graduates of the Madras Veterinary College on a par with those possessing basic foreign veterinary qualifications for purposes of recruitment to service.

15. In view of the fact that personnel with high qualifications and necessary experience are available in the Animal Husbandry department to man any post, this conference resolves to request the Government not to employ retired personnel or grant extensions to superannuated personnel for any post in the Madras Animal Husbandry Service. Re-employment in the subordinate cadre even may only be granted without prejudice to the claims of people in service.

16. This Conference is of opinion that the present scarcity of milk could be relieved to a great extent if only cattle feeds such as cotton-seed, oil cake and bran are made available easily and at reasonable prices through ration shops and co-operative stores and if the little quantity of oil cake available in this deficit presidency is preserved for cattle instead of being utilised as manure on land.

17. That, in the interest of future development of veterinary science and art so as to benefit the country to the maximum extent possible, this Conference is of opinion that only a person with veterinary qualification should be appointed as the Director of Animal Husbandry when a vacancy arises.

18. This Conference is of opinion that a comprehensive survey of the present position of livestock is highly essential for future planning and development and that it may be undertaken by the department of Animal Husbandry at an early date.

19. This Conference is of opinion that, in bringing the cultivable waste lands under the plough as part of the Grow More Food Campaign, sufficient area should be set apart by the Government at this stage itself for growing fodder crops so as to relieve the fodder famine that exists more or less in chronic form in several parts of the presidency and that District Fodder Committees be constituted to watch and regulate such work.

20. This Conference requests the Government to take immediate steps for the institution of a research station attached to the Madras Veterinary College with the several departments of the College as integral parts of this Research Institute and expanding them suitably.

21. This conference resolves, in the interest of livestock improvement work in this province, to request the Government to continue to retain the post of Livestock Development Officer, a post which has been in existence for the last 25 years.

22. This Conference reiterates the resolutions Nos. 3, 6, 8, 15 & 16 of the provincial veterinary conference of 1948, and requests the Government to take early action on the same.

23. Resolved to request the Government to appoint a special committee consisting of the Director, King Institute, Guindy, Director, Pasteur Institute, Coonoor, Superintendent, Veterinary Biological and Research Institute, Ranipet, The Director of Animal Husbandry and the President of Madras Veterinary Association to evolve plans to develop the institute at Ranipet into a first class station and putting up proposals for starting a new Institute.

The following were elected as Office bearers for the year 1950.

Sri R. Swaminathan—*President*.

1. Sri S. V. Mudaliar
2. " P. Srinivasa Rao
3. " P. K. Rangesa Rao
4. " M. N. Menon
5. " K. Govinda Sastry
6. " Bharadwajam
7. " C. Venkateswara Rao
8. " M. Kameswara Rao
9. " M. Muthugopal
10. " K. S. Krishnappa
11. " C. Krishna Rao
12. " I. D. Mantramurti
13. Mr. Bertie A'De Souza
14. Dr. I. M. Azizuddin
15. " G. Venkatachalam

*Members of the
Managing
Committee*

Sri M. S. Sastry, one of the oldest founder-members of the Association, spoke in appreciation of the arrangements made by the reception committee in connection with the conference, on behalf of the delegates.

The President, Sri T. Vinayaka Mudaliar, then delivered his concluding speech.

GENTLEMEN,

The time has come for us to part. So, I rise to bid you all, may I say, *au revoir*! My first duty at this session was to thank you for my election as President of the Conference and my last duty is to thank you again, for the way you have all helped me to conduct the proceedings, overlooking all my shortcomings. I claim no infallibility. The interest of the profession is a sort of religion with me and I might have made some mistakes of commission and omission and I seek your pardon for the same.

As regards this year's conference, I personally feel it was a great success, the credit for which should rightly go to the Chairman, Secretary and Members of the Reception Committee, who have laboured hard without respite, in between their exacting official duties and have made this Conference the success that it was. I thank them on behalf of you all.

The Subjects Committee discharged the work entrusted to them, under very difficult circumstances. On the first day, they worked for three hours after 6 P.M., and yesterday night they worked till 11 P.M. I for one would like to avoid getting into the Subjects Committee, excepting for the service involved. On your behalf, I thank them all.

It was a momentous session also in more ways than one. Sitting here, as I was watching the progress of the session from stage to stage, it

looked to me as if an era was ending and another era was beginning; it looked to me as if one generation was handing over to another generation; it looked to me as if the profession had rushed to the rescue of the profession to give a correct lead, when she was at cross-roads. It was a momentous session also judging from the abundance of support received from the Government. The climax came when the Hon'ble Minister showed us that graceful gesture of meeting the Delegates at Tea the other day. Such is the recognition which we are receiving these days as a profession, due to our organised activities on right lines.

Well, Gentlemen, I thank you all once again and close this Conference.

With a vote of thanks proposed by Sri G. Venkataratnam, the conference terminated.

A meeting of the Managing Committee of the Madras Veterinary Association was held immediately with Sri R. Swaminathan in the chair.

The resignation of Sri. M. Kameswara Rao was accepted and in his place Sri P. Srinivasan was co-opted as a member.

Sri C. Krishna Rao and Sri P. Srinivasan were elected as Secretary and Treasurer respectively for the year.

C. KRISHNA RAO,

Secretary.

Reminder

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THE INDIAN VETERINARY JOURNAL

Silver Jubilee Celebration Committee

In furnishing the account given below, I hereby offer my sincere and grateful thanks to one and all who have contributed to the celebration and made it a great success.

The account is now closed.

Amount already acknowledged in the *I.V.J.* }
(Sept.-Nov. 1949 issue p. 262) } Rs. 407 0 0

Amount received on 26-12-49.

Sri V. R. Rajagopalan Rs. 10	}	
" M. R. Dhanda Rs. 10		
" C. Seetharaman Rs. 5		
" J. M. Lall Rs. 5		
" N. C. Sen Rs. 5		
Dr. R. Mukherjee Rs. 3		
deducting M.O. commission.		32 8 0

Total amount received. 439 8 0

Expenses.—

i. Portrait of the Editor Rs. 75/-	}	
ii. Group Photo " 35/-		
iii. Tea Party " 273/-		
iv. Stationery & Postage. " 15/8-		
		398 8 0

Net balance. 41 0 0

The balance amount of Rs. 41/- has been credited to the account of the Indian Veterinary Journal.

Madras, }
20th January 1950. }

R. SWAMINATHAN,
Convener, I.V.J., S.J.C. Committee.

KAILASAMIER MEMORIAL FUND

List of persons who have contributed.

No.	NAME	Amount Contri- buted	Amount recei- ved	No.	NAME	Amount Contri- buted	Amount recei- ved
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		Rs.	Rs.			Rs.	Rs.
1	T. J. Hurley Esq.	...	50	31	" P. Subbarayulu	...	5
2	Pangal Srinivasa Rao	...	50	32	" D. Pattabiraman	...	5
3	Sri G. R. Viswanathan	...	25	33	" G. Theophilus	...	5
4	Sri R. Swaminathan	...	25	34	" V. Venkataraman	...	5
5	" K. S. Nair	...	20	35	" C. Madhava Nambiar	...	5
6	Major T. Murari	...	20	36	" R. Kuppanna Ayyangar	...	5
7	Sri M. Ramakrishna Pillai	...	20	37	" M. N. Dhandapani	...	5
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9	" A. R. Madhusudan	...	20	39	" K. R. Lakshminarayana	...	
10	" S. V. Mudaliar	...	10		Ayyar	...	3
11	" P. Krishnamurti	...	10	40	" K. Ranganathan	...	3
12	" R. Srinivasan	...	10	41	" B. Ramiah	...	3
13	" K. S. Gopalakrishna	...		42	" V. Appu Rao	...	3
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14	" S. Shanmugam	...	5	44	" Y. Kameswara Rao	...	3
15	" V. Venkatarama Ayyar	...	5	45	" K. Mallikarjuna Rao	...	3
16	" J. C. Victor	...	5	46	" Janab Abdul Khader	...	3
17	" G. S. Srinivasan	...	5	47	" J. D. David	...	3
18	Dr. Venkatachalam	...	5	48	" T. Seshachalam Nayudu	...	3
19	Dr. I. M. Azizuddin	...	5	49	" K. Kandaswami Raju	...	3
20	Sri K. P. Chandrasekharan	...	5	50	" D. John	...	3
21	" M. Dharmarajan	...	5	51	" B. Naganna	...	2
22	" M. Anantharaman	...	5	52	" M. C. Chellam	...	2
23	Srimathi K. Harris	...	5	53	" R. N. Govindaswami	...	2
24	Sri C. Krishna Rao	...	5	54	" D. Nilakanta Ayyar	...	2
25	" C. K. Velayudhan Nair	...	5	55	" M. Umapathi Rao	...	2
26	" R. Venkataraman	...	5	56	" K. Venkatarama Mudaliar	...	2
27	" P. M. Thillainayagam	...	5	57	" K. Narayanaswami	...	2
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