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Punjab Agricultural College and Research Institute, Lyallpur (1906-1947): Generating Knowledge for Colonial Enrichment

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Abstract

The paper discusses the colonial state's aims and objectives of establishing the Punjab Agricultural College and Research Institute, Lyallpur (1906-1947). It argues that the project of diffusion of scientific knowledge and technological change in agriculture, guided by imperialist interests, was half-hearted and aimed mainly to fulfil the colonial goals, e.g. political stability, military recruitment, financial profit and government solvency. In the course of transfer and diffusion of knowledge, the differentiated identities of colonial and Indian experts/colleagues were produced and strengthened.

Key words: Agricultural colonization, Agrarian economy, Scientific agriculture, Socio-scientific laboratory, State capitalism, Underdevelopment.

1. Introduction

Throughout the entire career of imperialist rule in India, the British administrators adopted an interventionist approach for rendering the colony governable and economically profitable. India was the first unit of the empire where the British made a conscious effort to take help of applied science and technology as an administrative tool and instrument knowledge for solving the practical problems of the empire. Its major problems included mapping the huge territories under its possession and integrating them, reducing its heterogeneous population (characterized by multiple castes/tribes and religions) into neat categories, exploiting India's human and natural resources for economic gain and military control. Botanical-cum-agricultural wealth was to be utilized for industrial and experimentation purposes. Both under the Company and the Crown rule, India became a socio-scientific laboratory for testing the ideologies and institutions which were emerging in Britain. Information-generation through state-sponsored scientific and technical projects, in which colonial bureaucrats, their entourage and indigenous workers participated, was an integral part of the knowledge-making process in India. Transfer of indigenous botanical varieties and their acclimatization was the first step in experimentation in agricultural sciences for dealing with virulent famines and their prevention.[1]

It is in this context that the colonial state constantly tried to strike a balance between its two contradictory objectives. Its first objective was to extract the maximum land revenue from agriculture with almost no investment for transforming agrarian production and the related labour systems as well as social and economic conditions of the majority of cultivators. This aim

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[1] For a detailed discussion on these associations under the Company rule see Edward W. Ellsworth, *Science and Social Science Research in British India, 1780-1880: The Role of Anglo-Indian Associations and Government* (Greenwood Press, New York, Westport, Connecticut, London, 1991), pp.115-130.

in Marxist view led to the 'development of under development' in India. The second objective was 'development of agrarian economy' to enrich the rāj through increased agricultural and industrial production. It required a radical change in Indian production and labour systems through huge capital investment by the colonial state. Thus, state capitalism sought to achieve agricultural development (later industrial development) of India.[2]

It may be noted that both objectives coexisted depending on which one carried a greater value and wieghtage in terms of political gain and economic profit during a particular period or in a particular region. Both these objectives remained relevant in different phases of the British rule. The first objective of 'development of under-development' dominated the thinking of the East India Company from 1750s to 1858 and the first two decades of the Crown rule; the second objective of 'development of agriculture (and industry)' through state investment became highly visible under the imperialist policy up to 1940s. The practical implication of the co-existence of two contradictory objectives was that different systems of agriculture in India, called the 'national industry',[3] and labour grew during the entire span of the 'imperial embrace' in Paul Scott's phrase (Scott, 1966, p.9). The British Punjab (central Punjab and the Canal colonies) provided an eloquent example of the co-existence of two imperialist objectives already discussed.

In this essay, my focus is on the project of diffusion of scientific knowledge and technological change in agriculture, which was guided by imperialist interests and was half-hearted. It was geared for fulfilling colonial goals, e.g. political stability, military recruitment and financial profit and government solvency. In this context the discussion has been restricted to three areas: (I) State as the landlord, and its ideological underpinning in scientific agriculture, (II) Objective of the establishment of Punjab Agricultural College and Research Institute as a part of British agricultural policies, and (III) Conclusion.

2. State as the Landlord

In his brilliant book *The English Utilitarians and India* (1959, 1982), Eric Stokes has discussed the influence of utilitarian ideas on the connection between the regularities of natural sciences and efficient conduct of human society. In his view, the utilitarians had propounded and elaborated their ideas on this issue. In the course of this exercise, they were led from the application of social theory to the application of science and technology to the construction of an efficient state machinery and profitable economic system (Stokes, 1959). The utilitarians namely, James Mill and Jeremy Bentham regarded India as a potential and valuable laboratory for testing their political, social and economic concepts. One such concept was the state as landlord (Stokes, 1959, p. 92).[4] Acceptance of this concept in the case of India made it different from Britain (where theory of *laissez-faire* was in vogue) and armed the company with a justification for undertaking state-funded scientific and technical projects for improving its vast landed estate (Dionne and MacLeod, 2007, p.112).

Being primarily a commercial Company, it pursued its objective of extracting maximum

[2] I have borrowed this theoretical formulation from Richard G Fox, *Lions of the Punjab, and Culture in the Making* (Archives Publishers, New Delhi, 1987).

[3] *Report of the Indian Famine Commission 1880*, Vol. I, Part I, p.2, Headed by Richard Strachey, the Commission investigated government administration relating to famines, land tenures, relief operations, communications, irrigation (a separate commission was constituted for irrigation), agricultural statistics and improvement. The Commission called agriculture as the 'national industry'.

[4] This concept was to some extent an inheritance from the Mughal Empire which the Company had seized. The Company used this argument for its revenue-collecting activities.

profit in the form of land revenue, assessed through systematic surveys in the territories under its possession. Until 1850s, it managed to do so without making almost no financial investment on the improvement of land except renovation of existing canals called 'protective'. After the cataclysm of 1857, the Crown and the British Parliament took over all the powers of controlling and ruling over the Indian subcontinent. Despite the transfer of power and authority over the empire, the concept of state as landlord remained relevant and intact. With its persistent belief in its role as an improving landlord, the Government of India under the Crown showed more zeal in the application of newly developed life-sciences for enhancing agricultural productivity and technology for modernizing methods of cultivation and irrigation. The expansion of state activism in this area was further accelerated owing to the British Government's anxiety over frequent and wide-spread famines throughout India. In response to the *Famine Commission Report* 1880s which emphasized the duty of the British Government as a landlord to the agriculturists in India for preventing famines and protecting the people, the colonial state decided to take active measures to deal with them. Recommendations of the *Famine Commission* regarding the creation of Agriculture Departments in each province, appointment of technical experts and special measures for the development of agriculture were implemented. However, more important recommendations for example, development of industry, which was independent of the fluctuations of seasons, were ignored.[5] No doubt, there was increase in the developmental activities in agriculture and veterinary sciences. But there were difficulties in the introduction and extension of western knowledge directly in the Indian villages, according to Frank L Bryne, the first official to make a planned and coordinated effort in Gurgaon (Dionne and MacLeod, 2007, p.193).

Despite their awareness of the social origins of famines, as pointed out in the *Report on the Improvement of Indian Agriculture (1883)* by the agricultural chemist John August Voelckar, the British Government made no effort in this direction. Appointed by the Secretary of State for India to explore the scope of further improvement and to evaluate the implementation of recommendations of *Famine Commission*, Voelcker emphasized, "that in many parts, there is a little or nothing that can be improved and that what was necessary was better facilities" (Voelcker, 1893, p. vi). In the context of the Report, Russell Dionne and MacLeod have interpreted 'better facilities' as social and economic conditions and lack of knowledge about modern cultivation methods (Dionne and MacLeod, 2007, p.177). Dubbing his suggestion as impractical and problematic, the Government chose to ignore it and focus upon technical solutions to the problems of Indian agriculture and famines.

The new Viceroy Lord George Curzon's arrival had coincided with the aftermath of virulent famines in 1897-98. He was determined to apply recent scientific researches and technological innovations to agriculture in order to tackle the problem of famines. Convinced that "….scientific research [is] the apex of educational advancement", Curzon emphasized that "…. In proportion we teach the masses, so we shall make their lot happier; so they will become more useful members of the body politic (Edward, 1963, pp.200-01)."

Diffusion of scientific knowledge had its uses both for administrators and the people. Improvement in administrative efficiency and application of new knowledge to modernize methods of cultivation was likely to equip rulers and the ruled to respond to future crises more effectively. Thus, a number of agricultural colleges, research institutes and experimental

[5] *Report of the Indian Famine Commission 1880*, cited in the *Report of the Indian Industrial Commission 1916-1918*, p.257.

farms were established (Edward, 1963).[6] Madras, Poona, Kanpur, Nagpur, Coimbatore and Lyallpur were selected as sites for these colleges (Qayyum, 2006, pp.70-71).

3. Punjab Agricultural College and Research Institute. Why was Punjab selected?

Punjab became the most crucial region owing to its strategic location marking the limits of the British territorial expansion after the annexation of the Lahore kingdom in 1849. Its capacity for intensive plough-agriculture enhanced its economic importance because state budget depended on its revenue income. The British control of the Punjab held great value not only for its role in sustaining the pecuniary budget of the state but also for the sterling contribution of its peasants-turned-soldiers in the imperialist wars in Europe. Owing to their assured productivity, the central districts of this region proved to be the most dependable for meeting the export requirements of the colonial state. While responding to the demands of world-market and discharging the burden of land revenue, the peasant-proprietors experienced high strain. Being disciplined by the market, they had almost turned into wage-workers. Owing to changes in the world-market and in the agrarian system under the rāj, the peasant-proprietor began to be treated as a burden by the state owing to his growing debt and consequent alienation of his land to the money-lender from whom he borrowed money to pay land-revenue in cash and meet heavy expenses on marriages.[7] Obviously, the colonial state could not afford to alienate the peasant-proprietors. Their discontent could lead to the loss of a reliable military base and dependable producers of revenue-income.

In 1880s, there was a strategic shift in state policy: from 'development of under development' to 'development of agrarian economy' through state capitalism or investment. By passing a detailed discussion of measures taken to save the peasant-proprietor from extinction, I shall focus upon the unique project of colonizing the vast stretch of Crown waste lands in the south-west Punjab through the deployment of the hardy cultivators of the central districts.[8] It was unique because the Punjab Government funded the project of irrigation technology for converting barren lands and jungles into lush green fields in the south-west Punjab. Such an experiment had not been made in any other province of the British India.[9] The laying out of an extensive network of canals, based on perennial irrigation and waters drawn from permanent weirs and head-works was the major technological innovation for the Government in India in view of the fact that Britain had not much experience of constructing canals.[10] The new agrarian frontier had been projected not

[6] For example, in March 1904, the foundation-stone was laid for a research laboratory and herbarium, Mr. Henny Phipps, an American millionaire, who had toured India in 1902-03, had provided a grant of $ 20,000 for this purpose.

[7] For a detailed discussion on contradictions between the growing indebtedness and the seeming prosperity of the peasant-proprietors in the central districts see M L Darling, *The Punjab Peasant in Prosperity and Debt (*London: first published. Reprinted Delhi: Manohar Publications, 1977). Also his book *Rusticus Locquitor or Old Light and the New in the Punjab Village* (Oxford University Press, London, 1930). Also N G Barrier, *The Punjab Alienation of Land Bill of 1900* (N.C. Durham 1966).

[8] After becoming the Viceroy of India, Lord Curzon noted with regard to Punjab, "I am inclined to think that irrigation has been rather neglected and we must give it a helping hand in future". For this extract see *Hamilton Papers* (in Microfilm), Curzon to Hamilton, 29 March 1900, Reel No.7 (New Delhi: National Archives of India).

[9] For a detailed discussion of agricultural colonization in the south-west Punjab and the role of the peasant-proprietors of the Central Punjab in this unique Project see Imran Ali, *The Punjab under Imperialism 1885-1947* (New Delhi: Oxford University Press, 1989)

[10] In the course of execution of the Ganga Canal Project, the Company Government had done the ground-work for its public work projects namely irrigation works. In order to obtain engineers trained in its own institutions, the East India Company sanctioned the establishment of Bombay Engineer Institution in 1824 and Thomason Civil Engineering, Roorkee.

Fig. 1. Punjab Agricultural College, Lyallpur (Faislabad); Courtesy: Hafiz Abdul Qayyum

only as the 'crowning achievement' of the imperialist rulers but also as their 'benevolent' participation in technological change in the traditional South Asian Society (Ali, p.3).' Of more immediate concern for the colonial authorities was that the canal region became the primary factor in Punjab government's solvency whose budget was increasingly dependent upon receipts from canal colonies.[11] In order to sustain and enhance government profit, agricultural processes required modernization. Support and encouragement of the British Government, which had received its share of profits from the canal colonies, was unequivocal because Lord Curzon's keen interest and gospel of technological reform had created a receptive environment for modernization of agriculture without bringing any structural change.

4. Establishment of the Punjab Agricultural College and Research Institute, Lyallpur

In pursuance of Lord Curzon's project of diffusion of scientific knowledge and its application to various agricultural processes, the British Government explored the possibilities of establishing agricultural education colleges and research institutes throughout India. The officiating Inspector-General of agriculture F G Sly had advocated the opening of a separate college in Punjab in March 1905.[12] The British Government allotted 56 acres of land for the College building in Lyallpur. Its construction was started in 1906 and completed in 1909 during the tenure of its first Principal H H Corbion, ICS (Qayyum, 2006, p.60). Besides a library, a herbarium and a museum, it was equipped with chemical, botanical, entomological and other laboratories (Qayyum, 2006). With its establishment, Lyallpur became the agricultural capital of Punjab. By 1930, it became a major centre of education.

The colonial state had gone beyond the broad imperial concern of performing its duty as the landlord to save the majority of population dependent upon agriculture and the people from hunger and destitution which were caused by

[11] The Punjab Government's collections from irrigated lands rose from less than 20 percent of total revenue in 1918 to more than 40 percent in the 1920s. The canal region had also provided the Government with other sources of income such as water-tax and sale proceeds from auction of land to non-agriculturists. Besides, land-grants to retired/demobilized soldiers and chiefs of Punjab ensured their loyalty to the *râj*.

[12] *Report on the Census of India*, Vol. XVI, part I, p.32; also *Report on the Administration of Punjab and its Dependencies, 1908-09*, p.20; also Deva Singh, *Colonization of the Rechna Doab* (Punjab Government Record Office Publications, Monograph. No.7, Lahore 1929, pp.60-61).

frequent and virulent famines. Believing in the efficacy of technical solution of the problems, the state Government opened Punjab Agricultural College and Research Institute which had aimed at technological reform. Its objectives[13] were as follows:-

1. To formalize agricultural education for improving productivity of land.
2. To encourage research in modern techniques of cultivation such as rotation of better varieties of crops, scientific preparation of soil through proper manuring, to utilize canal water and other modes of irrigation according to the differentiated requirement of crops.
3. To popularize the use of new agricultural implements in sowing, hoeing, thrashing, harvesting, etc.
4. To impart practical training to young sons of farmers for developing new varieties of wheat, rice, sugarcane and other cash crops and for growing exotic fruits on experimental farms and demonstration plots.
5. To experiment with the best methods for controlling crop diseases; to encourage students to popularize those varieties which were resistant to diseases.
6. To examine the behavior of disease-spreading bacteria and pests by chemical and biological tests in laboratory.

4.1 Appointment of Faculty Members

Concurrent with the construction of the college building, attention had been paid to the recruitment of the teaching staff and research investigators. Being a fully government-funded educational institution, the Punjab Agricultural College was fully controlled by the provincial government in the matter of appointments. Sanction regarding the number of positions in various disciplines was given on the basis of recommendations by the British and American experts chosen by the Punjab Government. In 1906, posts of Principal and Professor-in-Agriculture had been sanctioned and appointments made. It was a continuous process as the following table shows:

Year	Faculty Position sanctioned
1915	Agricultural Engineer
1919	Entomologist
1921	Associate Professor of Agriculture
1925	Cotton Specialist
1926	Fodder Specialist, Agricultural Chemist, Bacteriologist and Fruit Specialist
1927	Second Fruit Specialist and Millet Specialist
1928	Mycologist
1929	Oil seed Specialist-cum-Botanist
1934	Sugar Cane Specialist
1938	Associate Professor of Entomology & Vegetable Expert
1944	Statistics Expert

By 1947, strength of teaching staff was two professors, twelve Assistant Professors and seventeen Demonstrators. As a result of partition, non-Muslim faculty members i.e. eleven Assistant Professors and eleven Demonstrators migrated to India and they were replaced by Muslim staff.

4.2 Courses of Study

These were developed over the years as the following chart[14] shows:

Year	Courses of Study
1909	Started three-years Diploma Course in Agriculture
1912	Three years Diploma Course continued
1913	Introduced Licentiate in Agriculture course of four years

[13] I have compiled this statement of objectives from scattered official observations and *Reports of Famine Commission 1865, 1880*. Also Hafiz Abdul Qayyum, *n.*14, pp.69-72.

[14] The charts regarding appointments sanctioned and courses of study approved are based on the information available in Hafiz Abdul Qayyum, *Manzil-be-Manzil*, pp.67-68.

1917	Diploma was upgraded to B.Sc. degree during the tenure of Sir Robert Williams. It was split in two parts: (i) First Examination in Agriculture (FEA) was the qualification for jobs of Zaildars/Farm Managers (ii) Started four years course for B.Sc. degree (iii) College affiliated with Panjab University
1918	A vernacular i.e. Urdu course of one year was started for certified teachers of the Education Department. Its aim was to enable them to teach elementary principles of agricultural sciences in rural middle schools.
1923	M.Sc. course sanctioned and started by the Panjab University
1924	A course of one and a half month was started for black smiths *(lohars)*
1940	A class for gardeners *(malis)* was started. It continued upto 1942
1944	The Panjab University sanctioned Ph.D. degree in agricultural sciences.

It may be noted after the affiliation of the college with the Panjab University in 1917, the Department of agriculture ceased to be the examining body.

4.3 Admission Process

After the process of establishing the college including appointment of the Principal and one faculty member and development of course of Diploma in Agriculture was completed in 1909, the Punjab Government sanctioned the admission of 38 students. The strength of students was fixed according to the number of commissionaries in the Punjab (Qayyum, 2006, p.73). Upto 1913, not a single candidate applied for admission. It was only in 1914 that 23 candidates applied. From 1917 onwards when the college was affiliated with the Panjab University, the number of candidates began to increase. Matric was fixed as the basic qualification for admission. Ninety percent of students were from the agricultural background. However, others could also apply. Admission was made on the basis of merit, irrespective of the religious identity of the applicants. Broadly speaking, students belonged to middle class families. Medium of instruction was Urdu and it facilitated communication between students and teachers (Qayyum, 2006, p.73).[15] The following chart[16] shows the number of students, who took admission in various courses and passed:

Course of Study	No. of students Passed
Ph.D.	05
M.Sc.	360
B.Sc.	1867
LAG	90
LC	305
Urdu Class	2544
Mali Class	290

According to M L Darling around 334 were under training in regular courses in 1929-30 (Darling, 1949, p.86). For the B.Sc. degree course, the number of applicants had increased to 249 by the year 1929.[17]

4.4 Activities of the Research Institute

The Punjab Agricultural College had an active Research Institute. Its specialists had the advantage of learning from a variety of experiments in agricultural research carried out by the scientists in the Imperial Department of Agriculture established in 1870s. The fact that the Director of the Department of Agriculture, Punjab, was invariably the Principal of the College indicated that the bureaucracy retained total control and authority to decide policy and direction of modernization of agriculture. The college had set up a number of experimental farms in various sites adjacent to towns and cities namely, Lyallpur, Gurdaspur, Hansi, Sirsa, Multan, Montgomery,

[15] Also interview with G S Kalkat on 23 December 2015. He is the former student of the Punjab Agricultural College, Lyallpur. An ex-Vice-Chancellor of Punjab Agricultural University, Ludhiana (India), he is currently Chairman of the Farmers' Commission.
[16] For year-wise list of students who took admission in various courses see Hafiz Abdul Qayyum, *Manzil-be-Manzil*, pp.78-80.
[17] *Panjab Administration Report 1929-30*, p.51

Rawalpindi and Jalandhar.[18] On these farms, a variety of work was done for example, testing of the relative merits of different types of crops, production and selection of quality seeds as well as demonstrating the efficiency of new cultivation methods including preparation of soil and different types of manures.[19]

In order to conduct research intensively, in different areas, separate sections were created. The Punjab Government exercised effective control over the College as well as its Research Institute in respect of strength of faculty and its appointment as well as promotion. It provided the infrastructure also.

4.5 Cereal Section

It was created in 1926. However, research on wheat was initiated by an American expert M D Milan much earlier and he continued it up to his retirement in 1923. During his tenure, a new variety of wheat called 8A was discovered. His successor was Rai Bahadur Jai Chand Luthra, Professor of Botany, who continued the experiments on wheat and other cereals up to 1926. Impressed by the good quality of research work being done in the cereal section, the Punjab Government created the post of one Cereal Botanist and appointed Rai Bahadur Chaudhary Dhan Singh. He discovered a special variety of wheat known as '591 Gandam'.[20] In this section, research was also conducted on maize, barley, black gram, millet and pulses.

The improved varieties of wheat scored over other cereals. The remarkable yield of 23 *maunds* was obtained from Punjab 8A at Lyallpur. After 1914-15, the acreage under the improved varieties of seeds registered consistent growth. In 1929-30, improved seeds of wheat measuring, 50,570 *maunds* were distributed. The area under the new varieties in that year was two million acres out of total cultivated area of 10 million acres. In 1945-46, the area under the improved wheat seed rose to 8.32 million acres out of a total of 10.22 million acres.[21] It may be noted that distribution of improved varieties of seeds was done in collaboration with the Department of Agriculture, Punjab. It may be noted that this section had a well-equipped and adequately staffed Cereal Technological Laboratory to test the quality of the improved varieties of crops. In the year 1939-40, the first milling laboratory was established at Lyallpur under the auspices of Punjab Government

[18] In 1870s, the Imperial Department of Agriculture started a number of experimental farms and model farms which were not successful. An experimental farm at Amritsar was also started. As it failed to make an impact, it was closed in 1877-78. For details see *Report on the Administration of the Punjab and Its Dependencies 1877-78*, p.103. *Also Proceedings of the Department of Revenue and Agriculture and Commerce: Agriculture and Horticulture, December 1873,* No.4. However, all those officers associated with agriculture at provincial level namely, C H Hall, Commissioner and Superintendent of Amritsar Division, J B Lyall, officiating Settlement Commissioner of the Punjab, T Login, A Skinner believed that the most effective way of motivating the peasant-proprietors of the Punjab to change their existing modes of cultivation was their direct and close observation of demonstrations on the experimental farms. Their task became easy when control of experimental farms was transferred from the Government of India to the Government of Punjab in March 1873. For details of change in policy see *Proceedings of the Department of Revenue and Agriculture, July 1873*, No.4

[19] Prior to the establishment of experimental farms by the Punjab Agricultural College, the Punjab Government had initiated agricultural research by starting an experimental farm of 55 acres at Lyallpur in the Chenab Colony and 500 acres seed farm in the Jhelum Colony in 1901. At the Lyallpur Agricultural Station, experiments were made in developing suitable cotton seeds. Experiments were also made in the cultivation of jute. For a detailed discussion, see *Imperial Gazetteer of India, Provincial Series, Punjab*, Vol.I, p.62. Also *Report on the Administration of Punjab and its Dependencies*, p.20.

[20] H. Calvert, *Wealth and Welfare of Punjab* (Lahore: Civil and Military Gazette Press, 1922), p.84. According to him, the most prominent varieties of wheat were Punjab 11, Punjab 8A, Punjab 265. The new type of wheat varieties produced crop 15 maunds per acre. Also Hafiz Abdul Qayyum, *Manzil-be-Manzil*, p.94. According to Qayyum, an ex-student and later on a Professor in the Punjab Agricultural College, Lyallpur, a special variety of wheat '59 Gandam' was developed in the Cereal Section.

[21] *Punjab Administration Report 1929-30*, p.52. Also M L Darling, *Punjab Peasant*, p.152

and Indian Council of Agricultural Research in connection with two interlinked schemes, viz. Wheat Technology and Wheat Milling and Baking Tests.

It continued its activities until 1947.

4.6 Oil Seed Section

It was created in 1929. Khan Sahib Chaudhary Ali Mohammed was the first Oil Specialist who continued to occupy this post up to 1945. Among the other experts were included Dr. Sultan Ahmad, Chaudhary Mohammed Aziz, Chaudhary Mohammed Afzal Naaz, Sheikh Niaz Ahmed and many others.[22]

4.7 Vegetable Section

It was established in 1938. Dr. Swaran Singh, who had obtained his M.Sc. and Ph.D. degrees from America, was appointed as the Vegetable Specialist and first head of this section. During his tenure, staff members were given the facility of buying fresh vegetables from its farms. After the creation of Pakistan, Dr. Swaran Singh migrated to India and this section was merged with the Fruit Section of the Punjab Agricultural College. From 1947 to 1950, it had a temporary status.

4.8 Fruit Section

Prior to 1926, responsibility of research in fruit section and gardening had been given to the Economic Botanist M D Milne and Rai Bahadur Jai Chand Luthra. While the former performed his duties from 1906 to 1923, the latter from 1923 to 1926. As the research on all the major fruits was to be undertaken, the post of a Fruit Specialist was created on the recommendation of experts in this field.

Hence, in 1926, Sardar Bhadur Lal Singh was appointed as the Fruit Specialist. Within a short time, a post of Assistant Fruit Specialist was created and Sardar Baal Singh Bajwa was appointed. The rapid increase in the demand for advice and help in fruit culture necessitated the expansion of work and in 1931, an independent section was created. In this very year, Fruit Section saw many important developments for instance, the installation of the Canning Hall and Juice Plant, starting of the fruit plant nursery and training of gardeners. Research schemes on fruit culture and fruit preservation, financed by the Imperial Council of Agricultural Research, were also taken up. Fruit shows were organized on a large scale. Under the able guidance of S Lal Singh, the section expanded very rapidly. A practical training course was made compulsory for all the B.Sc. (Agriculture) students.

In the year 1938 further progress was made. Advanced training in Fruit Preservation was commenced. The cold storage plant was installed and research on storage life of different fruit varieties under different temperatures and other treatments were initiated. The Citrus Root stock experiments were started at Montgomery and a Progeny Garden was laid at Risalawala for the supply of plant material for raising plants of standard varieties. The scheme for manorial research at Attari was sanctioned. In this very year, Horticulture was made a major subject for the B.Sc. in Agriculture and an Assistant Professor of Agriculture was appointed. Post-graduate training in Horticulture was also started in 1940. Since then, no less than 34 from Pakistan and abroad have taken the M.Sc. (Agriculture) in Horticulture.

4.9 Food Technology Section

It was started in 1945 at the campus of the Agricultural College. Its main function was to

[22] I have based my account of Oil Seed Section, Vegetable and Fruit Section and Food Technology Section on Hafiz Abdul Qayyum, *Manzil-be-Manzil*, pp.97-99. *Also Fifty Years of Agricultural Education and Research* at the Punjab Agricultural College and Research Institute Lyallpur, West Pakistan, Vol. I & II, Golden Jubilee 1909-1959 (Dept. Of Agriculture, West Pakistan Faisalabad, 1960).

conduct research for the preservation of vegetables and fruits. This section was shifted to Delhi in 1947. In order to fill in the gap, Government of Pakistan secured the services of an American expert C W Eddy in 1954.

4.10 Entomological Section

Teaching of Pest-control as a subject in the LAG Diploma was started as early as 1909. With the appointment of an Imperial Entomologist, research was started in this field. In 1917, when it was decided to start B.Sc. degree course in the College, Dr. Khan A. Rahman was appointed as Assistant Professor by Mian Afzal Hussain, who had joined as Entomologist in the Imperial Agriculture Service. In 1933, when Afzal Hussain became Principal of the College, he promoted his protégé A. Rahman as Associate Professor. In 1938, Mian Sahib took over as Vice-Chancellor of Panjab University, Khan A Rahman got the coveted post of Entomologist. Many other teachers contributed to the research work on the disease-causing insects, locusts and flies.

The Entomology Section had achieved remarkable success in developing effective methods for pest-control. To control the crop diseases, three methods were employed. The first method was to popularize those varieties which were resistant to diseases. The second was to familiarize the cultivators with the advantages of adopting improved methods of cultivation such as careful preparation of soil, watering and manuring of crops at appropriate time and rotation of crops on scientific lines. Finally, the behavior of disease-spreading bacteria, which destroyed the crops, was examined. Techniques of control by chemical methods were developed. To control loose smut disease of wheat, solar treatment was tried. Dr. Khan A Rahman wrote a booklet 'PEST Number', which was regarded as a Bible by experts in Entomology (Qayyum, 2006, p.99).[23]

4.11 Plant Pathology Section

In 1906, M D Milne had been appointed as Professor of Botany. It was during his tenure that new varieties of wheat 8A and Cotton 4F had been discovered. In 1923, when he was promoted as Director of Agriculture, Rai Bahadur Jai Chand Luthra was given his post. On his suggestion, the post of Mycologist was created and Dr. Kirpa Ram was appointed against this post. He was the first officer who established a high class laboratory to do research on the major crop diseases. After his death in 1930, the post of Mycologist remained vacant for three years. In 1934, Dr. Abdul Sattar was appointed as Assistant Mycologist. When Rai Bahadur Jai Chand Luthra died in 1946, Agha Khair-ud-din was promoted as Professor of Botany to continue research on plant pathology. In 1954, he was promoted as Assistant Director of Agriculture and shifted to Lahore. In 1957, Dr. Abdul Ghafoor took over as head of Plant Pathology and continued until 1961 when the Punjab Agricultural College was upgraded to the status of a University.

For conducting research in Plant pathology, a number of students and teachers were involved namely Kishan Singh Bedi, Dr. Abdul Hafiz, Mian Abdul Hamid and Maulvi Mohammed Akhtar. A number of students wrote research papers and got M.Sc. and Ph.D. degrees (Qayyum, 2006, p.100).

4.12 Chemistry and Agricultural Chemistry Section

After its establishment in 1907 (Punjab Agricultural College's foundation in 1906), The Punjab Government appointed J H Barnes as the Agricultural Chemist and he continued up to 1917. B H Wilsdon was his successor who worked up to 1922. Appointed in 1920, Dr. P E Lander continued research in the various varieties of grass for animals and his tenure lasted up to 1944. Dr. Dalip

[23] Also *Report on the Census of India, 1931*, Vol.XVII, pt.I, p.33. The use of inorganic fertilizer also grew steadily.

Singh, who took charge, worked till 1947. A unit of the Chemistry and Agricultural Chemistry Section was known as the Bacteriological Section, created in 1925. Dr. Ram Singh Sarkaria held the charge as Agricultural Chemist and retired in 1949. He was succeeded by Dr. Desai and Mulk Raj Madhok. After partition Madhok migrated to India and Sardar Mohammed took over in 1947 and worked on this post until his retirement in 1950. Besides, Agricultural Chemists and Research Assistants, the Department had a teaching faculty namely, S D Butt and Dr. Inamul Haq (Qayyum, 2006, p.101).

4.13 Agricultural Engineering Section

Established in 1914, the Department was headed by Miller Brown Lee, who became the Principal of the College in 1926 and relinquished his charge in 1932. During his tenure, Agricultural Engineering Workshop was set up in order to give practical training to students. Land surveying was introduced as a compulsory subject and added to the existing course of B.Sc. Agriculture. For teaching this subject, a post of Assistant Professor was sanctioned and Khalid Parvez was appointed (Qayyum, 2006). It may be noted that the subject of veterinary science, too, was compulsory for the B.Sc. students. In order to be eligible for degree they had to pass the course of agriculture workshop, which included practical training in farm-management and modern methods of cultivation.

A new scheme of wells for irrigation was developed by the Engineering Section of the Punjab Agricultural College and the Research Institute, Lyallpur. According to the official sources, a lot of work had been done to explore the possibilities of development of lift irrigation in unirrigated tracts of the Punjab. For this purpose, a strainer tube well which was often 200 feet deep and capable of watering 200 to 400 acres, was introduced. Water was raised to the surface by an engine (Trevaski, 1937, p. 237). With the slip strainers, invented by an Englishman, a great improvement had been made in boring wells. The use of pipes in wells increased the supply of water in the ordinary percolation wells and it increased the capacity of wells from 100 to 300 percent. The well-boring section bored around 1000 wells annually for cultivators all over the provinces.[24]

4.14 Animal Nutrition and Bio-Chemistry

In this field, research had been started in 1909 when J H Barnes had been appointed as Agricultural Chemist. It gathered momentum with the addition of P E Lander who had also worked as Agricultural Chemist from 1921 to 1944. After his retirement, Dalip Singh was promoted as Agricultural Chemist and Pandit Lal Chand Dharmani as Agricultural Chemist-II. Along with Maulvi Akbar Ali, both of them continued research in the quality fodder for a variety of animals. Appointed as Professor-in-Botany, D Milne also researched in the field of fodder. His research pertained to various types of grasses for animals. In 1947, one post of Assistant Botanist (Fodder) had been sanctioned (Qayyum, 2006, p.103).

It may be mentioned that cultivation of fodder was an integral part of the course-work for B.Sc. Agriculture. It was compulsory for students to cut it and make preparations for green manure. During the term of four years, students used to go for agricultural tours to various districts of Punjab and Delhi. They were trained to become agricultural experts including animal husbandry. They acted as guides to farmers in the course of their tours.

Besides, students had to undergo one year training course in dairy farming. It included practice in milching buffaloes and cows. One year

[24] *Census of India, Report, 1931*, Vol.XXVII, pt.I, p.13. *Punjab Administration Report, 1929-30,* p.52. Experiments were also conducted for the development of tube-wells. For a detailed account of Sir Ganga Ram's contribution see Imran Ali, *The Punjab under Imperialism 1885-1947*, pp.219-221.

Veterinary Course, too, was compulsory for B. Sc. students.

4.15 Agricultural Agronomy

In 1905, S. Milligan was appointed as the first Deputy Director of Agriculture in accordance with the decision of the Punjab Government. One Farm Manager and three Agricultural Assistants were also appointed. Promoted as Professor in Agriculture during the tenure of H H Corbion who had been appointed as Professor-cum–Principal of the College from 1906 to 1919, S Milligan continued until 1915. Sardar Labh Singh, the first Indian and a former student and Diploma holder from the College, was appointed as Professor. His research enabled him to discover a rare variety of cotton L.S.S.

From 1940 onwards, research work was started in the field of 'Water Requirement of Crops'. A research scheme was sanctioned by the Government of Punjab in 1940 to undertake research on water-requirements of crops such as sugarcane, cotton, wheat and other crops. An area of about two-squares was earmarked at Risalawala farm. It was placed at the disposal of Lala Tehl Ram who had been appointed by the government as extra Assistant Director-in-charge of this scheme as a gazette officer class II. He was assigned a staff of four Research Assistants to do the work. Research-work on water-requirements of crops was continued up to 1947 when the country was partitioned and Lala Tehl Ram migrated to India. After his departure, research was continued for a number of years and results of these experiments regarding irrigation of crops were published in the Punjab Agricultural Magazine by the Principal of former Punjab Agricultural College, Lyallpur (Qayyum, 2006, 103-04).

As a part of their practical training, B.Sc. students used to visit Risalawala Farm (located at Dukot Road) for learning from irrigation experiments regarding a number of crops. Hafiz Abdul Qayyum and D R Bhumbla, former students, felt excited by these novel demonstrations.

4.16 Botany Section

Established as early as 1906, its services were utilized both for teaching and research. Right from the outset, D Milan had been appointed as Professor and Economic Botanist and he continued up to 1923. His successor Rai Bahadur Jai Chand Luthra, who was associated with the discipline of Botany, worked until his retirement in 1946. Agha Ghias-ud-din, the next incumbent, worked from 1946-54. In this section Dr. Mohammed Afzal worked as a Plant Physiologist from 1959-61. Many botanists remain engaged in discovering a variety of herbs of medicinal utility and locating fodder for animals in mountainous regions during summer and winter (Qayyum, 2006, p.107).

Among other researchers were included Puran Anand, Madan Mohan Lal and Lala Chuni Lal. After the migration of non-Muslim staff in 1947, new appointments were made in order to continue research activities and share teaching duties until the upgrading of the College to the status of a University in 1961.

The Research Institute had many other sections which were still at the development stage in 1947, for example, Physics and Meteorological section. In the College, there was no separate department for teaching Physics but it had been included in the four year course of B.Sc. Agriculture. Bhai Balmukand had been appointed as Assistant Professor and to help him, Lala Lekh Raj as Demonstrator. Their tenure ended in 1947 when Chaudhary Abdul Aziz took over as Assistant Professor. After his retirement Azmatullah Sidiqqi occupied this post until the College was given the status of a University in 1961.

Department of statistics was established in 1944. As this subject was regarded as essential

for M.Sc. degree in Agriculture, it was decided that students should do research under the supervision of D M Qureshi, Principal of the College. Thus, seventeen students were enabled to get their M. Sc. Degree (Qayyum, 2006, pp.108-09).

4.17 Principals[25]

After the establishment of the Punjab Agricultural College and Research Institute, Lyallpur in 1906, H H Corbion, ICS was appointed as the first Principal by the Punjab Government. During his tenure up to 1909, the College building was constructed. Under the guidance of J H Barnes (1909-1916), the second Principal, 3 years Licentiate in Agriculture Diploma course was started. Sir William Roberts (1916-21), saw two major developments: 4 year B.Sc. Agriculture in 1917 and founding of the Old Boys' Association in 1919. The next incumbent in the post of Principal was D Milne (1925-1926) who saw the first batch of students getting the degree of B.Sc. in Agriculture in 1921. The first batch of post graduates passed in 1928 during the tenure of W H Brown Lee (1926-1932). Khan Bahadur Mian Afzal Hussain remained the Principal for five years (1933-1938). During the tenure of P E Lander (1938-1940), Entomology was made a major subject and the 'PEST Number' of the College magazine was published. Khan Bahadur Maulvi Fateh Din, the second Indian to be appointed as the Principal (1940-1942), started the gardening (Mali) class. Rai Bahadur Jai Chand Luthra, a Professor of Botany and a committed researcher, was appointed as Principal. As the Indian freedom struggle became intense and reached its conclusive phase, tenures of the Principals of the College became shorter. For example, Rai Bahadur Ram Dhan Singh served as Principal barely for one year (1946-1947). During this short span, new varieties of rice and wheat were developed. Dr. Dalip Singh,[26] who later became the first Principal of Punjab Agricultural College, Ludhiana(India) had worked as Principal just for four months (May 1947 to August 1947) when the British rulers partitioned the country. The Punjab Agricultural College and Research Institute lost its composite character.

It may be noted that the Punjab Government was the appointing authority of the Principal of Punjab Agricultural College and Research Institute, Lyallpur. Invariably, Director of Agriculture worked as Principal also and he was either an Englishman or an American. Only those Indians, who enjoyed the trust and confidence of the British rulers, were appointed as Principals of the College only after 1942.

5. Conclusion

On the basis of our discussion, three points emerge. One is the confirmation of my basic assumption regarding the British economic policy especially agriculture 'doing good to oneself' while pursuing two contradictory goals. These were 'Development of underdevelopment' and 'Development of agrarian economy', in the Punjab whether under the Company or the Crown rule. Right from the year of annexation of the Lahore Kingdom in 1849(the Jullundur Doab annexed in 1846) to 1870s, the peasant- proprietors of the Punjab, especially in its central districts, were trapped in a double-bind. They were literally forced not only to provide recruits for the British army but also to extract maximum revenue-income as well export income for the state through their back-breaking hard work in their fields by producing cash crops namely, wheat, cotton and other crops. By 1880s when faced with decrease in revenue, the Punjab Government resorted to

[25] Information regarding Principals from 1906 to 1947 has been gathered and collated from official and non-official sources especially Hafiz Abdul Qayyum, *Manzil-be-Manzil*, pp.81-82

[26] Dalip Singh was appointed as the first Principal of the Punjab Agricultural College, Ludhiana and served it from 1949-1952.

state capitalism. It invested huge capital in its project of agricultural colonization of the virgin Crown lands in the south-west Punjab.

This ambitious project involved construction of a network of canals in order to provide facility of irrigation for the arid region. Again the enterprising peasant-proprietors of the central Punjab were lured to migrate to the Crown waste lands with the promise of ownership of the plots of lands when converted into lush green fields. Ultimately, they were not only denied the right of ownership of holdings through a change in the terms and conditions but also denied parity in material gain with the grantees such as landlords, chiefs of Punjab and retired soldiers owing to their political weightage or contribution to either the expansion or safety of the British empire. Thus, distribution of land in the canal colonies aimed at avoiding social tensions in the Punjabi society which otherwise implicated fissures in the colonial political structure in the long run. It was, in fact, politics of agricultural colonization.

Second point concerns the central issue in the imperialist strategy: how to turn its huge investment in the 'Development of agrarian economy' in the canal region into a three-pronged profitable venture. The Punjab Government obtained spectacular growth in its income: first from sale of water, second from enhanced tax on irrigated land and third from increased revenue through growth in productivity. Similar considerations of huge profit were applicable to experiments and research for developing better varieties of cotton, wheat, rice, flax, jute, etc., conducted on experimental farms and laboratories of the Punjab Agricultural College and Research Institute, Lyallpur. In other such institutions in Kanpur, Madras, Nagpur, Poona and Coimbatore, too, such experiments were done in order to cater to the colonial food requirements; trials in hybridization and water-management for different crops had been carried out for the same purpose. It may be added that the College and the Department of Agriculture, Punjab collaborated. However, the latter remained the dominant partner.

It may be conceded that the British agrarian policy through establishing educational organizations and their tight management had motivated the peasantry to focus on increasing production of cash crops. The peasant-proprietors, who had migrated to the canal colonies, had surely become well-off. It is also a fact that their counterparts in the rest of Punjab continued to live in difficult economic conditions owing to constant competition from the canal colonists who had enjoyed better facilities for cultivation. Thus, the enclavist and short-term British agrarian policy, despite the provision of education in scientific agriculture, had retarded structural change. Technical solutions alone could not bring social development.

Third point concerns the nature of the knowledge-generation process in the Punjab Agricultural College and Research Institute, Lyallpur. It is a complex process involving collection of basic ecological information about the region, existing modes of cultivation, variety of crops and fodder being grown before undertaking various kinds of experiments, based on European knowledge of scientific agriculture and on lessons of agrarian revolution in England. Aimed at increasing efficiency and productivity, generation of knowledge about modern agricultural implements, new and disease-resistant varieties of cash crops, exotic fruits and vegetables under the guidance of British and American experts in controlled environmental conditions, formed one component of the imperialist plan for modernization of agriculture. However, its second and more important component – transfer and diffusion of agricultural knowledge and its acceptance by the majority of cultivators was problematic. Faculty members of the College and Research Institute, who conducted the actual experiments in the laboratory and the fields and

used imported implements for various agricultural operations, unconsciously compared them with traditional knowledge, modes of cultivation and related practices. While the foreign experts, Indian teachers, students, employees and trainees from the Department of Agriculture worked as a team in the framework of a formal Government institution, stratified division of labor was obvious. Hierarchization of traditional and European systems of knowledge and their respective practices became distinguishable in the fields where students were given practical training and in the colonial educational institutions like the Agricultural Colleges and scientific organizations. It was in these institutions that common knowledge about improvement of agriculture and its modernization process was generated. It was in this space that different identities were produced and strengthened.

However, it may be conceded that the process of modernization of agriculture, started by the British rulers for their profit, was taken forward in the Punjab Agricultural College and Research Institute, Lyallpur (upgraded to the status of a University in 1961 by the Pakistan Government). It was an unintended legacy which has been institutionalized in the Agricultural Universities in independent India. The Punjab Agricultural University, Ludhiana represents not only the migration of ideas and talent but also synchronization of traditional and European systems of knowledge. What is more significant and heartening is the bonhomie and collaboration between the two institutions year after year.

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Appendix-I

Names of the Principals of the College of Agriculture, Lyallpur (now Faisalabad) from 1906 to 1961

S. No.	Period From	To	Name of the Principal
1	1906	1909	Mr. H H Corbion (During his tenure construction of the College Building was completed)
2.	1910	1916	Mr. J H Barnes
3.	1917	1921	Sir William Roberts
4.	1921	1926	Dr. D Milne
5.	1926	1932	Mr. WA Miller Brown Lee
6.	1933	1938	Khan Bahadur Mian Afzal Hussain
7.	1938	1940	Dr. P E Lander
8.	1940	1942	Khan Bhadur Maulavi Fateh Din
9.	1943	1946	Rai Bahadur Jai Chand Luthra
10	1946	1947	Rai Bahadur Ram Dhan Singh
11.	May 1947	August 1947	Dr. Sardar Dalip Singh

12.	1947	1950	Dr. Khan Abdul Rehman
13.	1950	1952	Malik Amanat Khan
14.	1952	1954	Mr. A W Chaudhary
15.	Feb. 1954	July 1954	Khan Sardar Khan
16.	1954	1958	Chaudhary Zafar Alam
17.	1958	1960	Dr. Abdul Sattar
18.	1960	1961	Mian Anwar Hussain
19.	1961	To the time when the Status of the College was raised to University	Commander Dr. Abdul Latif

Up to the period when Pakistan came into being in 1947, the teaching staff consisted of 2 Professors, 12 Assistant Professors and 17 Demonstrators. After Partition, non-Muslim Staff members including 11 Assistant Professors and 11 Demonstrators migrated to India and in their place Muslim staff members were appointed.

Appendix-II

Names of some of the old students of the Agriculture College, Lyallpur, who migrated in 1947 and their designations/posts in India

I. Vice-Chancellors of Agricultural Universities

1. Dr. L S Negi (Vice-Chancellor of a number of Universities)
2. Dr. A S Cheema (Ludhiana)
3. Dr. B S Lamba (Udaiypur & Hissar)
4. Dr. Sukhdev Singh (Jabalpur & Ludhiana)
5. Dr. D R Bhansala (Hissar)
6. Dr. Het Ram Kalia (Palampur)
7. Dr. J C Bakshi (Pussa)
8. Dr. G S Kalkat (Ludhiana)

II. Agricultural Commissioners, Govt. of India

1. Dr. Sawan Mal Sikka
2. Dr. A S Cheema
3. Dr. D Bhumbla
4. S Harbans Singh
5. Dr. G S Kalkat

III. Deputy Director General, Indian Council of Agricultural Research

1. Dr. Sukhdev Singh
2. Dr. J S Kanwar
3. Dr. D R Bhansala
4. Dr. N S Randhawa

IV. Heads of the Departments in the Indian Agricultural Institute, New Delhi

1. Dr. Sawan Mal Sikka – Botany
2. Dr. B S Lamba – Agronomy
3. Dr. S S Bains – Agronomy
4. Ch. Amir Singh – Seed Technology

V. President, Forest Research Institute, Dehradoon

1. Sh. R C Kaushik
2. Sh. Ramesh Chand

VI. Director General, Indian Council of Agricultural Research and Secretary Agriculture (Research), Government of India

1. Dr. N S Randhawa

VII. Joint Director, Agriculture, Haryana

1. Bhai Bhagwan Dass

VIII. Designation /Status in International Organizations

1. Dr. D S Athwal, Deputy Director General, International Rice Research Institute, Manila(Philippines)
2. Dr. J.S. Kanwal, Deputy Director General, International Crops Research Institute for Semi-arid crops, Hyderabad

Appendix-III

List of the number of students (year-wise) who passed various examinations of the Agriculture College

Year	Ph.D.	M.Sc.	B.Sc.	LAG	LC	Urdu Class	Mali Class
1912	0	0	0	8	0	0	0
1913	0	0	0	12	0	0	0
1914	0	0	0	9	0	0	0
1915	0	0	0	14	0	0	0
1916	0	0	0	0	19	0	0
1917	0	0	0	20	20	0	0
1918	0	0	0	6	34	0	0
1919	0	0	0	4	14	0	0
1920	0	0	0	17	15	28	0
1921	0	0	6	0	17	26	0
1922	0	0	14	0	10	24	0
1923	0	0	18	0	12	24	0
1924	0	0	26	0	6	11	0
1925	0	0	25	0	5	19	0
1926	0	0	26	0	9	18	0
1927	0	0	30	0	20	38	0
1928	0	1	16	0	21	77	0
1929	0	2	34	0	15	77	0
1930	0	1	42	0	8	66	0
1931	0	2	57	0	8	54	0
1932	0	2	53	0	6	30	0
1933	0	1	47	0	8	25	0
1934	0	1	37	0	7	33	0
1935	0	2	26	0	14	61	0
1936	0	3	31	0	8	60	0
1937	0	2	24	0	15	82	0
1938	0	1	31	0	1	38	0
1939	0	3	57	0	4	89	0
1940	0	3	52	0	8	94	19
1941	0	8	73	0	1	99	15
1942	0	8	63	0	0	89	12
1943	0	14	62	0	0	51	14
1944	2	8	57	0	0	42	12
1945	1	11	62	0	0	168	6
1946	0	14	59	0	0	122	12
1947	0	9	63	0	0	120	49
1948	0	10	40	0	0	19	0
1949	1	10	55	0	0	52	8
1950	0	0	15	47	0	0	52 7
1951	0	19	53	0	0	68	7
1952	0	19	62	0	0	68	20
1953	0	25	43	0	0	52	16
1954	1	28	55	0	0	75	14
1955	0	19	73	0	0	64	12
1956	0	24	85	0	0	90	8
1957	0	30	86	0	0	82	17
1958	0	30	82	0	0	129	24
1959	0	35	95	0	0	128	18
Total	5	360	1867	90	305	2544	290

Appendix-IV

On Mon, 2/8/16, Dr. Hafiz Abdul Qayyum <aqhafiz@yahoo.com> wrote:
Subject: Fw: Agricultural Research Journal 1909-1947
To: "kamleshmohan14@yahoo.com" <kamleshmohan14@yahoo.com>
Date: Monday, February 8, 2016, 12:30 AM

Dear Prof. Kamlesh Mohan

I want to give you the following information on "RESEARCH ON WATER REQUIREMENTS OF CROPS" A research scheme was sectioned by the govt. of Punjab in 1940 to undertake research on water requirements of crops. The work was started at RISALAWALA FARM" and an area of about two squares was earmarked and placed at the disposal of "LALA TEHL RAM" who was appointed by the govt. as extra assistant director in-charge of this scheme as a gazette-d officer class II. He was given four research Assistants to work on this scheme. Research was undertaken by the staff on Sugarcane, Cotton, Wheat and other agricultural crops. This work was continued up-to 1947 when the country was portioned and LALA TEHL RAM migrated to India. After him the work continued for a number of years and the result of researches were published in the Punjab Agricultural Magazine which was published by the Principal of Former Punjab Agricultural College Lyallpur. A document in two volumes was published in 1959 as "FIFTY YEARS OF RESEARCH AND TEACHING IN THE FORMER PUNJAB AGRICULTURE COLLEGE LYALLPUR" (GOLDEN JUBILEE NUMBER). Some mention of research on water requirements was made in this document published in two columes. I was student from 1941 to 1945 and in those days our class used to visit the Water Requirement Research Scheme at Risalawala. This area was located at DIJKOT ROAD near GAOSHALA. Dr. D.R. Bhumbla who was one year senior to me and who graduated in 1944 and who retired as Vice Chancellor Hisar University and presently is residing at Ludhiana would endorse my view and might make some additions. His telephone number is "7589170700" You may contact him. LALA TEHL RAM was under the Professor of Agriculture/ Deputy Director Lyallpur, SARDAR LABH SINGH. I shall try to visit the Library of University of Agriculture Faisalabad on Monday Feb 08, try to dig out literature available on this subject and shall try to convey the same to you if I am successful in my effort. Anything which you need more, contact me through email or on phone. Convey my regards to your father/elders who happen to read Urdu.

Regards,

Professor Dr. Hafiz Abdul Qayyum,
M.Sc.(Agriculture), M.Sc.(AUB), Ph.D.(WPAU) 252-D, Peoples Colony No.1, Faisalabad 38090,Pakistan Tel: 0092418546341 Fax: 0092418722059
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