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MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

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Dated 31st October 1867

Not to be folded or roughly handled

Proceedings of the Madras Government, Revenue Department,
31st October 1867.

Read the following papers:—

No. 602. Proceedings of the Board of Revenue, dated 24th August 1867, No. 5,491.

Read letters from Collector of Nellore, dated 11th August and 7th December 1866, Nos. 15 and 29.

1. In their Order of the 22nd December 1864, Revenue Department, No. 2,243, Government resolved on intrusting the revision of the Settlement in certain districts to their Collectors, instead of to the separate agency of the Settlement Department, and generally stated the principles on which operations were to be conducted.

2. As the demarcation of the Nellore District had just been completed, the Collector, Mr. Dykes, was instructed to commence its assessment at once, and the services of Mr. Rundall, with a special establishment, were afforded to him for the purpose.

3. Mr. Dykes reports the results of his operations in one talook, that of Atmakur, in the papers recorded above.

4. The total area of this talook is given as 395,539 acres, or nearly 620 square miles. But of this area 26,528·22 acres are held on Zemindary tenure, 27,550·81 on various favorable or Inam tenures by whole villages, and minor and service Inams comprise a further area of 23,612 acres. In addition to these appropriations, 28,654 acres are taken up by village sites, roads, tanks, and the like, or are reserved for these purposes. Deducting this extent of land, the Ryotwary area to which the present scheme of assessment applies, comprises 284,192 acres, of which Mr. Dykes regards 265,323 as "available for occupation at the ordinary rates of assessment," the difference consisting apparently of river beds and isolated hills.

5. Besides the above area, the talook contains a considerable extent of land valuable for wood and pasture, but which it was difficult to bring within the scope of the survey.

6. Mr. Dykes commences first with the classification of the land. The classification recognized by the ryots among themselves is very minute. There are no less than thirty distinct varieties of soils, and some of these have several gradations of quality. Taking the latter into account, there are altogether seventy-four classes of land in this one talook. Mr. Dykes states that the thirty main classes have been "recognized and recorded" in his operations.

7. Mr. Dykes next gives the result of his experiments to ascertain the productive powers of the soil. The experiments were 857 in number, and extended over the years 1864-65 and 1865-66. The standard grains selected for the unirrigated land are Jonna and Arugu, seventy-five per cent. of the land being under the former, and one-twelfth under the latter. The experiments, however, were mostly made on Jonna, the customary calculation of the ryots that the yield of Arugu is in quantity double that of Jonna being accepted as regards that grain. At an early stage of the proceedings, Mr. Dykes prescribed the rates of produce for each class of land that should be recognized in the Settlement, fixing two Tums per acre as the minimum, and (ultimately) making the gradations 3, 5, 7, and 10 Tums. On this scale of grain values the whole land of the talook appears to have been classified.

8. The price lists on which the commutation rates have been fixed range from 1801-2 to 1865-66, a period of sixty-five years. Mr. Rundall recommended Rupees 27½ for Jonna, Rupees 13¾ for Arugu, and Rupees 23¾ for white and black Paddy, per pooty,* these being about the average of the ordinary years in the series. Mr. Dykes, however, in consideration of the great fall in the relative value of money, and of the opening of foreign markets, which in his opinion render it extremely unlikely that prices will ever fall lower than the average of the sixty-five years, has adopted Rupees 30, 15, and 25 for these grains respectively.

9. The allowance proposed for contingencies of season and fallows ranges from thirty-three to forty per cent.

10. The expenses of cultivation range from Rupees 1-7-0 to Rupees 2-10-9 per acre for Jonna, and from As. 13-3 to Rupees 1-8-3 for Arugu, and from Rupees 5 to Rupees 5-13-7 for Paddy.

11. The rotation of crops, so far as it is practised and considered necessary, has also been taken into account.

12. In paragraphs 30 to 43 Mr Dykes discusses at considerable length the results of these calculations and the value of the net produce deduced from them, and proposes rates of assessment ranging from 8 Annas to 4 Rupees, as shewn in the margin, for the dry lands of the talook.

	AS.	
2 Tum land ...	8 12	"according as the land can stand cropping."
	RS.	
3 Tum land ...	1	
5 ,, ,, ...	2	
7 ,, ,, ...	3	
10 ,, ,, ...	4	

13. The classification, &c., of the wet land have been carried out in the same manner, except that no deduction is proposed for fallow or contingencies of season, and in paragraph 49 of his letter, Mr. Dykes gives an abstract of the results arrived at, the net produce per acre running from Rupees 6-1-0 to Rupees 22-10-0. Taking a moiety of the net produce as the share of Government, the minimum and maximum rates of assessment would thus be Rupees 3 and Rupees 11-8-0. Mr. Dykes, however, in the succeeding paragraph, gives up this mode of assessment, and proposes that the wet land shall be rated in the same manner as the dry, and charged a water-rate of 4 Rupees per acre.

14. The general result of Mr. Dykes' proposals would be a reduction of the dry assessment of the talook from Rupees 1,12,133 to Rupees 77,482, and an increase of the wet assessment from Rupees 83,525 to Rupees 1,14,103, the net decrease being Rupees 4,073. To this has, however, to be added Rupees 12,640, the water-rate on 3,160 acres of gardens, which is to be transferred to the head of "Dry," and Rupees 5,867 on account of Poollary, the net decrease being thus raised to Rupees 19,873. The area available for future occupation is calculated by Mr. Dykes as 85,000 acres.

15. In the foregoing paragraphs the Board have given a brief summary of the salient points in Mr. Dykes' report, and they regret, that, notwithstanding the vast amount of care, labor, and research, which Mr. Dykes has evidently bestowed on the subject, neither his processes nor his recommendations seem to them worthy of acceptance.

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* Note.—A Pooty in Nellore = 640 Madras Measures.

16. In the first place, by setting aside the consideration of the physical constituents of the soil as a basis of classification, he has departed entirely from the instructions of Government. These instructions were as follows:—" The classification of soils will be according to the usual division into clay, sand, loam, &c., " with as many subordinate classes in each division as may be rendered necessary by " material differences of fertility." The Government therefore evidently intended that the classification should be carried out on the principle followed by the Revenue Settlement Department, modified so far as local peculiarities might render necessary. Mr. Dykes, however, has merely recorded the very minute classification recognized by the ryots and bases his own classification entirely on a graduated scale of produce. It is obvious that a classification based solely on the latter system involves, if properly carried out, the testing of each field for a series of years, a process which is quite beyond the means of Government, and gives opportunity for unlimited fraud. When, however, the classification is carefully made according to the nature of the soil, the productive power of each class can easily be ascertained by a series of experiments in different villages, and a sufficiently accurate average obtained. The Classifier's work then is limited to assigning each field to its proper class of soil, and errors, whether proceeding from ignorance, negligence, or fraud, are easily detected and remedied. It is much to be regretted that Mr. Dykes departed from a system which has so much to recommend it, and which was clearly laid down for adoption in his instructions.

17. Mr. Dykes' gradation of rates of produce appears to have been arbitrarily arrived at, and there is nothing in the report to shew how the land was thrown into these rates, *i. e.*, how it was determined that any particular field belonged to the 4 or the 20 " Bushel" class. In paragraph 12, Mr. Dykes says:—" In Gulaka " Regada *classed at four Bushels*, forty-seven experiments in thirty-two villages gave " a mean result of exactly four Bushels." This implies that the land was *first* rated at four Bushels, and this rating was found accurate on being tested by actual measurement. And again it seems that when land was thus rated, it so continued, whatever the results of the subsequent test might be; for in the abstract appended to paragraph 49, land found to produce forty-nine Bushels per acre still stands classed as 14-Bushel land. The only other suppositions are that the rating of the lands proceeded on their reputed value according to the estimation of the ryots or was left to the judgment of the Classifiers and Measurers. Either course obviously is unreliable, for it is impossible to impose any real check on operations so conducted, or to prevent collusion and fraud.

18. The results of Mr. Dykes' experiments, moreover, do not by any means bear out the accuracy of his rates. Taking the case of the 4 Bushel or 2-Tum Gulaka Regada already referred to, an examination of the actual measurements given in Appendix III, pp. 1 to 7 shews, that two Tums are not a fair average. The experiments were forty-seven in number, and in five instances, the outturn ranged from 4 to 6½ Tums. This land ought to fall at least into the 3-Tums or 6-Bushel class, and its retention in the 2-Tum class unduly enhances the mean of the forty-seven experiments. In one instance the outturn was ½ a Tum, in another it was ¾; in no less than twelve cases it was only 1 Tum, and in eight others it was from 1¼ to 1¾. Thus the actual result was materially below Mr. Dykes' average in twenty-two, and materially above it in five of the forty-seven experiments. Again,

in paragraph 35 of Appendix III, three experiments are set down as yielding an average result of six Tums, but one of these gave only two, another four, and the third, twelve Tums. To call the average of this six Tums, and to class the land as 4-Tum land, are obvious fallacies. If this land be assessed at four Tums, one field will be valued at 100 per cent. above its ascertained yield, while another field will be valued at only one-third of the same. At pages 17 to 23 of Appendix III will be found a record of 111 experiments on 4-Toom Gulaka Regada; but of these 111 trials, no less than forty-eight yielded less than three Tums, and twelve more than five, the maximum and minimum yield being 11¼ and 1¾ Tums. It is needless, however, to multiply instances of erroneous averages of this nature.

19. It appears from the abstracts appended to paragraphs 45 and 49 of the report, that the same system has been pursued in regard to wet land. Mr. Dykes devotes paragraphs 11 to 19 of his report to an analysis of these experiments, and finally expresses the opinion that his scale of rates gives with sufficient accuracy the "relative grain values" of the predominating classes of soil, an object which he considers of the highest consequence. It is quite impossible, however, to accept his so-called averages, as being averages in the proper sense of the term. Nor when it is seen, (as in paragraph 45) that land ascertained by seventy-nine experiments to yield twenty-eight Bushels is rated as 4-Bushel land, while other land yielding twenty-one Bushels is rated as 20-Bushel land, can the Board acquiesce in the opinion that even the relative value of the different soils has been gauged. It is clear that some fundamental error has pervaded the classification, and no better proof of the impracticability of the system adopted by Mr. Dykes can be desired, than the absolute impossibility of making any use or founding any conclusion on the mass of experiments and averages which he has submitted.

20. The Board regret to observe that they can come to no other conclusion than that a correct classification of the soils, and their actual as well as relative values, has not been arrived at, and that re-classification on the principles adopted by the Revenue Settlement Department is essential. From the fact of the native classification of each field tested having, as Mr. Dykes states, been recorded in the Registers, this work may probably be done with comparative ease and facility. The same principle should, in the Board's opinion, be adopted throughout the district.

Commutation price.

21. STANDARD GRAINS.—The standard dry grains, viz., Jonna and Arugu, may, the Board think, be accepted, and they are not prepared to reject the price proposed by Mr. Dykes. The price list extends over a series of no less than sixty-five years, and includes years of every variety, from seasons of famine, when not unfrequently the ryot is a gainer rather than a loser, to years of abundance, when his produce is scarcely marketable, and its average may be safely accepted, if, as Mr. Rundall proposes on the contrary, that eight years of high prices be excluded. But considering the steady tendency of prices upwards and the improbability of their ever falling below the average of such a lengthened period as sixty-five years, that average may, the Board consider, be found perfectly safe. Mr. Rundall indeed himself admits that if ample "allowance is made for vicissitudes of seasons and similar contingencies, the average of the whole period might be taken on sound grounds, and with perfect justice." This average is only 2½ Rupees above Mr. Rundall's rates.

The present commutation prices are 28 and 30 for Jonna, and 20 for Paddy, and present prices are upwards of 40 for Jonna and Paddy, and of 20 for Arugu.

22. It is, however, very desirable, before finally determining on the commutation rate, that similar price lists should be obtained for the other talooks of the district, and forwarded with the opinion of the Collector as to the advisability of having one rate for the whole, or, at all events, for large sections of the district.

23. The agricultural system of the district has been very carefully studied, and the allowance for fallows and contingencies of season may also, the Board think, be accepted with propriety. This allowance, ranging as it does from thirty-three to forty per cent. of the gross produce, is extremely liberal, if the average outturn is accurately ascertained; but it has been calculated after such extensive and careful investigations that it would not be advisable to reduce it. Mr. Dykes seems indeed to doubt whether sixteen per cent. for contingencies of season is sufficient, but he does not advert to the fact that the gross produce, as taken for Settlement purposes, is an *average*, and therefore to a certain extent covers some of the deficiencies incident to ordinarily bad years. The allowances for these contingencies as well as for fallows are, moreover, deducted from the *net* produce, though in the case at least of the fallow there is no expenditure of labor or money in the field.

24. CULTIVATION EXPENSES.—The manner in which the cultivation expenses have been calculated is explained in Appendix I. Mr. Dykes in paragraph 29 of his report seems to think that the cost of cultivation has been under-rated, and he specially notices Mr. Rundall's omission of interest on the capital sunk in the purchase of ploughing cattle, and objects to his not having "debited his manual labor for the year." He remarks that Mr. Rundall has "taken this latter charge for the crop," but on the other hand he points out that the cattle are not solely employed on the dry land, and the general conclusion at which he has arrived is, that "there are good grounds for increasing the deductions to be made from the "gross produce, and when this deduction has been made, no reliance can be placed "on the actual result." Mr. Dykes asserts, that, "so far as our calculations go," the poorer soils from four Tums downwards cannot be worked except at a loss. He attributes this result to the fact of the assessment being based entirely on the grain produce, to the exclusion of the stock, &c., which the ryot raises on the land, and the value of which does not appear in our calculations. Without fuller explanation from Mr. Rundall, the Board cannot judge how far his calculations are amenable to these criticisms of Mr. Dykes. Mr. Dykes assumes that a pair of cattle suffice for the cultivation of ten acres of Jonna, that they will last for twelve years on an average, and will cost Rupees 160. This gives an annual charge of Rupees 13, to which have to be added interest on the purchase at twelve per cent. or Rupees 20. The total annual charge for ten acres is thus Rupees 33. Mr. Rundall allows only Rupees 8-10-8 for the best Regada land, but Mr. Dykes himself admits in paragraph 29 that the cattle are not employed all the year on the dry land, so that according to his own argument, if Mr. Rundall's allowance of Rupees 8-10-8 is too low, that of Rupees 33 is too high. It is to be regretted that in so important a particular more satisfactory results were not arrived at. As regards "manual labor," Mr. Rundall seems to have ascertained and set down what the ryots usually pay for each process, and if he has done this also in respect to the charge for ploughing, he has adopted the correct course, for the *hire* of labor necessary includes interest on capital, &c., just as the price of an article include everything incident to the cost of production. Mr. Rundall's rates are, however, lower than those arrived at by the Settlement Department for other districts, and a full explanation of the manner in which he deduced them is necessary before they can be accepted.

25. The net produce obtained by all these processes has come out so small, that Mr. Dykes has apparently been driven to propose disregarding the calculations and their results in a great measure, and basing the Settlement on a consideration of the other profits, besides grain, which a ryot gets from his land. He purposes

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25. The net produce obtained by all these processes has come out so small, that Mr. Dykes has apparently been driven to propose disregarding the calculations and their results in a great measure, and basing the Settlement on a consideration of the other profits, besides grain, which a ryot gets from his land. He purposes

taking into the calculation the produce of the dairy, the stock raised on the farm, &c. In paragraph 32 he says: "It may, I think, be affirmed that these grain values "cannot be taken as quantitative, that the net produce must be otherwise arrived at, "calculated on a broader basis than the crop, and our results are qualitative, neces- "sary to secure the even incidence of the land tax, to prevent labor and capital being "diverted from the more to the less productive lands, but not, what the Government "can, with propriety, act on, in fixing the amount that shall be paid per acre." And, in paragraph 43, after alluding to the various circumstances, and chief among them the fact of 70,000 acres of land being waste in the talook, he proposes six rates of assessment running from eight Annas to four Rupees per acre. The adoption of these rates involves a reduction of Rs. 34,651, or thirty-one per cent. on the assessment of the occupied area of dry land.

26. The Board could never support this proposal, which is tantamount in fact to casting aside all the data and calculations available, and imposing a discretionary assessment. The mere fact that there are 70,000 acres waste in the talook is not, *per se*, proof of over-assessment, as the land may be culturable only in name, or the area already under cultivation may be as much as suffices for the available labor. Mr. Dykes affords no information on this point, nor does his report contain any statement shewing the area cultivated and waste at each rate of assessment. Beyond the simple facts that there are 70,000 acres waste, and that in Atmakur, as elsewhere, there is some land which, if cultivated, will not, at present prices of labor and produce, yield any profit or rent, Mr. Dykes affords no information at all. It does not appear to have occurred to Mr. Dykes to ascribe the results which have so disappointed him to the faulty character of his operations. In the margin, the grain values of the districts which have already been settled are shewn, and it is apparent that unless the Atmakur talook be particularly unfertile, Mr. Dykes' scale of grain values is very low indeed. From the table given in Appendix 15, there seems to be no land at all capable of producing more than 260 measures, and only 161 acres are rated at that yield out of 1,00,000 acres. The present assessments, ninety-five in number, range from 3 Annas to Rupees 4-2-8 per acre, and the result of Mr. Dykes' assessment will, therefore, be to raise the rates on the poorer and least profitable soils, a measure which, if the classification be correct, will tend only to increase the area of waste, for if there be land which though now rated at three Annas is waste, it certainly will not be brought under cultivation by being assessed at eight Annas. According to the data furnished, the Board cannot help believing that there is a far greater area than Mr. Dykes' classification shews, which can afford to pay a higher assessment than 3 Rupees, his maximum, and still leave the ryot a moiety of the net produce on an equitable calculation. It is of great importance, as Mr. Dykes urges, to secure relative accuracy, but the Board fail to see how the relative values of different soils can be ascertained without first arriving at an approximation of their actual productive powers and to relieve the finest soils, while the assessment on the poorest is raised is contrary to every principle.

GRAIN VALUES PER ACRE.

Description of soils.	Class and sort.		Cholum. Godavery.	Cholum. Masulipatam.	Cholum. Kurnool.	Cholum. South Arcot.	Cholum. Trichinopoly.	Cumboo. Godavery.	Cumboo. Masulipatam.	Cumboo. Kurnool.	Cumboo. South Arcot.	Cumboo. Trichinopoly.	Raggy. Godavery.	Raggy. Masulipatam.	Raggy. Kurnool.	Raggy. South Arcot.	Raggy. Trichinopoly.	White Paddy. Godavery.	White Paddy. Masulipatam.	White Paddy. Kurnool.	White Paddy. South Arcot.	White Paddy. Trichinopoly.
			M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.	M. M.
Permanently improved	2	1	800	520	480	432	480	667	420	...	504	480	933	...	...	528	576	1,200	1,100	1,200	1,080	1,080
	...	2	667	380	...	384	384	533	280	...	432	480	800	...	...	432	480	1,000	800	...	960	960
Regar clay ...	3	1	733	400	360	384	312	600	280	...	384	384	800	...	...	336	408	1,067	800	1,000	840	840
	...	2	533	300	280	336	288	400	200	...	336	360	600	...	...	288	288	800	600	800	720	720
	...	3	334	220	200	...	168	334	120	...	240	240	334	...	...	...	240	600	480	600	432	432
Regar loamy ...	4	1	600	300	280	384	432	466	240	...	408	480	600	...	...	360	528	1,200	1,000	1,100	960	960
	...	2	466	220	200	...	312	366	180	...	360	384	533	...	...	336	408	1,000	800	900	840	840
	...	3	267	160	1,200	...	192	300	120	...	240	240	300	...	...	...	240	800	600	600	672	576
Regar sandy ...	5	1	...	220	200	288	288	433	180	...	336	360	533	...	...	288	288	933	640	800	720	720
	...	2	...	160	120	...	240	366	120	...	288	288	366	...	...	240	288	733	480	600	672	600
	...	3	...	100	80	...	168	267	90	...	240	240	267	...	...	...	240	533	360	400	432	432
Red loam	7	1	334	...	...	...	312	467	180	...	336	384	..	...	...	288	408	1,067	...	600	720	720
	...	2	200	...	...	...	240	334	120	...	288	288	...	...	...	...	288	800	...	450	600	552
	...	3	133	...	...	...	...	200	..	...	216	...	...	...	...	...	...	667	...	...	360	312
Red gravelly ...	8	1	200	...	...	...	240	267	120	...	288	288	...	...	...	...	288	800	...	450	480	552
	..	2	134	...	...	...	168	200	90	...	240	240	...	...	...	...	240	667	...	300	432	432
	...	3	67	...	...	...	...	100	...	...	192	...	...	...	...	...	...	533	...	...	360	312

27. The Board have again to express their regret that they cannot at all acquiesce in Mr. Dykes' proposals, and that he has still to shew that his rates fairly approximate to a moiety of the net produce.

28. In paragraphs 44 to 50, Mr. Dykes treats of the assessment to be imposed on the irrigated land.

29. The irrigated area of the talook is given as 17,554 acres, of which 13,740 are under tanks.

30. The 243 experiments made in 1864-65 and 1865-66 yielded a mean result of 16½ Tums per acre, the extremes being 24½ and 10½; but if these averages have been arrived at in the same manner as those of the dry land, they are evidently useless. On the subject of these experiments, Mr. Rundall writes:—"They have been worked up according to the qualities of the several soils in manner similar to the dry experiments, *but the classification being based on the dry productive power of the soils*, it is difficult to deduce any results from the details they present. The same cause prevents the calculations of soils according to their qualities under irrigation being made as regards cultivation expenses, and they cannot be made to harmonize with a classification according to dry productive powers. * * * I regret my inability to give the average outturn per acre. Whatever I might mention in this respect would be *such mere conjecture* that I refrain from shewing any outturn, save of the straw, which does not vary so much as the grain, and is given as a set-off in part against the cost of feeding cattle; *but even for this I deem the data I have to be liable to correction*," and on such data it would be absurd to attempt to found any scheme of assessment, much less to assent to Mr. Dykes' crude proposal to rate the land as dry, and charge an uniform water-rate of 4 Rupees per acre. According to the abstract appended to paragraph 50, the result would be that "20-Bushel Nalla Regada" would have to pay 8 Rupees, while the entire net produce is only 3 Rupees, and "14-Bushel Tuvva Banka Regada" would pay 7 Rupees, while its entire net produce is Rupees 22-10-0. In the first case the assessment would be 5⅓ times the half net, and in the second it would be only $\frac{7}{11}$th of it. These cases may be "exceptional," but similar disparity pervades the proposed scale of rates, for the "6-Bushel Yerra Isuka Banka Nela" with Rupees 7-2-0, as the value of a moiety of

the net produce will pay 5 Rupees, while the "10-Bushel" land of the same denomination and exactly the same valuation in wet produce will have to pay 6 Rupees, and the general result of the scheme is to raise the total Nunjah assessment of the talook from Rupees 83,525 to Rupees 1,14,103, or forty per cent.

31. The Board do not understand on what grounds Mr. Dykes assumes that a separate water-cess is to be imposed in the case of tank irrigation. In the case of tracts watered from anicuts, the quality and sufficiency of the water supply varies little, but the reverse is the case in respect to tank irrigation. In other districts it has been found necessary to group wet lands according to the source of irrigation. Mr. Dykes' plan, however, would impose the same rate on land receiving an abundant and never-failing supply from river channels and on land dependent on a small tank with a precarious supply, and would entirely ignore the very different value of the water in the two cases. No data whatever are adduced in support of his scheme, which in fact is put forward merely as a simplification of matters. The Board are constrained to observe that Mr. Dykes' proposed Nunjah assessment must equally with his dry assessment be condemned.

32. The land, wet as well as dry, must be re-classified on the principles of the Revenue Settlement Department, and the productive power of each class carefully ascertained. The failure which has attended Mr. Dykes' effort is, the Board think, to be attributed primarily to his having so unfortunately deviated from his instructions, and failed to avail himself of the experience gained by the Revenue Settlement Department. The report also seems to the Board to be pregnant with evidence that Mr. Dykes undertook his task with strong preconceived notions of the proper method of fixing an assessment, and thus, unconsciously biased, has drawn confirmation of his theories from results which would otherwise have satisfied him of the unsoundness of his views.

33. In paragraph 51 of his report, Mr. Dykes requests permission to introduce simultaneously with the new assessment, certain rules which he has prepared in supersession of the existing Hookumnamah. As this proposal is contingent on the confirmation of his scheme of settlement, no further remark is here necessary as to the rules themselves, than that some of them are open to grave objections, and that the Board are now engaged in drawing up a Hookumnamah of general applicability.

34. In paragraph 53, Mr. Dykes alludes to the Registers which he has adopted, and desires permission to retain them until the assessment of the whole district has been revised. The only novelty in this system seems to be the maintenance of several Registers instead of one General Register. The Board see no objection to the permission sought being accorded, if the plan be really a convenience during the revision; but once the assessment is revised, the form of Register used in all the newly settled districts must be adopted. It would be highly inconvenient to have different forms in different districts.

35. Paragraphs 54 to 56 of the report relate to the Village Establishments of the talook. The Board are in communication with the Acting Collector on this subject which is manifestly a measure which cannot be dealt with separately for each talook.

36. In paragraph 57, Mr. Dykes treats of land reserved for, or applied to, what he terms "public purposes." In the first place he states that the survey has not excluded unprofitable portions of fields, notwithstanding the orders of Government to that effect. If this be really the case, and as a general rule unprofitable portions are included in the survey area, a suitable allowance must be made for the error, as was done in Trichinopoly. Mr. Dykes' language, however, leads to the supposition that by "unprofitable" he merely means portions of a field less productive than the rest. His words are "with the rates proposed, unprofitable "portions will, I trust, disappear in time;" but the term as used by Government is intended to mean land taken up by hedges, rocks, and the like. As regards village sites, no precise rule can be laid down. Where they are sufficient for the wants of the people, and likely so to be for some years to come, no further reservation of waste is necessary, save for a common village tope or halting place. Where however this is not the case, any suitable adjacent waste land should be reserved for the purpose. By the immemorial usage of the country, ryots are granted building sites in the "Nuttum" free of assessment, and the revenue thus lost is too trifling to be set against the unpopularity which a deviation from this long established usage would entail. It is no doubt desirable that the people should live on their holdings; but this cannot be forced on them. As regards lands hereafter required for drainage, roads, and irrigation channels, if these wants can now be foreseen, it will of course be well to make the necessary reservations at once, so as to avoid the expense of having to purchase the land when wanted; but, as a general rule, the exercise of such foresight is practically impossible. The reservation of tracts for fuel is being separately considered, as it has no necessary connection with the assessment of the arable land, and must be treated as a general question affecting the district at large. The same remark applies to the scheme referred to in paragraph 58.

37. The Board will in separate Proceedings when disposing of the present Acting Collector's letters on the subject, propose to Government measures which now commend themselves for adoption in regard to the revision of the Settlement in the Nellore District; and while thus reluctantly compelled to set aside so much of what Mr. Dykes has done and proposed, they cannot but acknowledge the labor which he has bestowed on the task assigned to him.

No. 603. Proceedings of the Board of Revenue, dated 26th August 1867, No. 5,503.

Read the following letter from the Acting Collector of Nellore, to the Secretary to the Board of Revenue, dated 4th May 1867, No. 7.

1. Mr. Dykes' proposals for the introduction of a new assessment into the Atmakuru talook, as contained in his letter, dated 11th August 1866, No. 15, are now before the Board, and as no final orders have yet been passed upon them, I am induced to crave the Board's indulgence and lay before them what appear to me to be serious defects in this scheme. It is not without considerable diffidence, that I have voluntarily undertaken this task; but as I have been already engaged in the Vizagapatam District in superintending preliminary measures for the introduction of a new Settlement, and have submitted a report, with certain proposals, for the introduction of new rates of assessment into the Government talooks of that district, which report has, I believe, not yet been laid before the Board, I feel that I approach the subject here not without some previous experience.

2. Mr. Dykes' system of classification is to assign a grain value to all descriptions of land taking four Bushels per acre as the lowest description of soil, and then to distribute these arbitrary classes with reference to the existing local designations of the soils. He takes Jonna, a dry crop, as the single standard for unirrigated land, and in the case of irrigated land proposes to add a uniform water-cess of Rupees 4 an acre to several amalgamated classes of the dry or Punjah rates he has so obtained. This is certainly a very simple system, but what are likely to be the results. Even in Atmakuru, which is chiefly a dry talook, we find at present, as he says in paragraph 40, ninety-five different rates of assessment ranging from Rupees 13 to Rupee 0-9-4 a *gorru* = 3⅛ acres. He proposes in paragraph 50 to substitute instead twelve rates ranging from Rupees 4 to Rupee 0-8-0 an acre. In the worst sorts of soil, I believe this will be found too high, for he takes it for granted that no land yields less than four Bushels (two Tums) an acre.

3. But when we come to irrigated or Nunjah land, let us see how Mr. Dykes' uniform water-rate of Rupees 4 an acre, added to the dry rates, would work. In the Atmakur talook, I find that there are fifty-five different Nunjah rates ranging from Rupees 30 to Rupees 16-0-2 per *gorru* in *Makta* (fixed rent) villages, and twenty rates ranging from Rupees 9-9-7 to Rupees 1-0-8 per acre in *Paimayesh* (assessed rent) villages. Mr. Dykes proposes, in paragraph 50 of his report, to substitute twelve Nunjah rates ranging from Rupees 8 to Rupees 4-8-0 per acre. It must be remembered that it by no means follows that what should be rated as a poor soil if unirrigated remains equally low down in the list if converted into Nunjah; on the contrary, from the information I have been able to obtain, some of the poorest Punjah soils of the arenacious series rank among the highest in Nunjah. A uniform water-rate according to the acreage irrigated may answer well in Godavery or Kistna, where the Nunjah consists almost entirely of heavy clay soils, or it may be an excellent system of charging for an Irrigation Company to adopt, or even for Government generally to save trouble in the case of water supplied from public sources to Inams, when land is converted by means thereof from dry into wet; but it would appear from the information we already possess as to the physical character of the soils of the district, that it would be far preferable to have two distinct series of rates of assessment, one for Nunjah and the other for Punjah.

4. As to Mr. Dykes' system of assigning grain values to the different descriptions of soil. Each field is first examined by a Classifier, and with reference to the soil, pronounced to be two *Tum*, four *Tum*, eight *Tum* land, &c., afterwards actual kyles are made on the different classes of land for the purpose of testing the accuracy of the Classifier's estimate. Each kyle is made upon the produce of not less than a quarter of an acre. Of course kyling on this scale must be very slow work, and accordingly we have much arbitrary classification and comparatively little actual data. In Vizagapatam, at my recommendation Government were pleased to sanction the entertainment of a special establishment of Kyle Gumastahs for four months who visited in turn nearly all the villages in each talook, and made a large number of experiments upon all the different descriptions of soil to be found. These kyles were made each upon two square yards only. Each man was able to make a number of kyles in one day, and in each case he was bound to state whether the crop was good, fair, or middling. Thus we had a large number of

kyles upon an extended area. When the kyling season was finished, I had the results very carefully reduced in my Office. I took the Revenue Settlement Department classes of land and placed opposite each the local names as nearly as it was possible to make them correspond. Thus for each description of soil I collected the kyles in different villages in two series wet and dry, took about an equal number of kyles for each class of land, and struck an average as to the produce of an acre upon the actual results of two square yards. Now in this district I do not think it would be safe for Government to pass any final orders upon the results in a single talook, Atmakuru for instance. I would institute a series of kyles in four talooks at least, taking Jonna and Arugu as standard crops in Punjah, and white Paddy as a standard crop in Nunjah. I would propose for this purpose the employment of the present staff of Classifiers, and a number of independent kyles might be made by the European Officers of the district to check these results. Then I would have these results tabulated according to the different classes of soil in dry and wet, and an average struck for each. I am convinced that far more reliable results would be obtained by this means than by the present rough system of estimating the productive powers of land by the eye, corrected by a few actual kyles. No doubt, the course I propose will nullify much that has been already done at a great outlay of time and labor, but we are introducing a rate of assessment that is to last for thirty years, or perhaps to be made permanent; it is, therefore, most important that we should secure a sound basis for our calculations, and while correcting all existing inequalities, make no unnecessary sacrifice of the revenue of the State.

5. As to the adoption of commutation rates for the value of different grains the process seems to be perfectly sound, by which Mr. Rundall with reference to the prices that have prevailed during the ryots' selling months for a period of sixty-five years, (excluding only exceptional bad seasons,) has in the case of the Atmakuru talook been led to fix Rupees 23-12-0 as the commutation rate for Paddy, Rupees 27-8-0 for Paira Jonna, and Rupees 13-12-0 for Arugu. But I perfectly agree with Mr. Rundall that, instead of having distinct commutation rates for each talook, we should endeavour, if possible, by a more extended observation of past prices, to introduce one rate of commutation for the whole of the principal division, if not for the whole district. It seems to me that Mr. Dykes has attempted to generalize too much on data procured from a very limited area of observation. I would propose to extend the field of experiments to at least four different talooks, and make a few tentative kyles in the others also, and compare the results so obtained before coming to any definite conclusions as to the rates of assessment to be adopted. I would earnestly deprecate the adoption of any patchwork system of settlement. Far better to postpone a *final* decision as to any particular scheme of rates until a sufficiently broad basis has been laid in the collection of information to build upon. This will enable us to adopt one single combined plan, instead of having subsequently to introduce corrections and amendments, alterations and modifications in consideration of circumstances which were omitted to be taken into account in the beginning.

6. The Board are aware that the new survey areas have been entered in the accounts of this Fusly in certain talooks, but the excess brought to light in ryots'

holdings has not been charged, and it is proposed that it should not be charged until the new rates of assessment are introduced. Under these circumstances, I cannot but think that Mr. Dykes has been somewhat premature in remitting the *Pullary* or grazing-tax in all villages into which the new survey areas have been nominally introduced, that is for entry in accounts, but not as a basis of assessment. There will be a considerable loss of revenue, I anticipate, by this course in the present year.

7. With reference to the further calculations that have to be made in determining new rates of assessment, the Board will see that, according to Mr. Rundall's calculations, it is proposed to make a deduction of from thirty to forty per cent. for contingencies of seasons and for fallows according to the different classes of soil. We then come to the expenses of cultivation. Mr. Rundall's calculations here have been taken on an area of ten acres. He has allowed for cost of bullocks, implements, ploughing, manuring, seed, watering, cutting and stacking, threshing and storing. To this he adds the cost of feeding stock, and the total is the expense of cultivation, which he deducts from the money value of the grain outturn, *plus* the value of the straw, *minus* the allowance for contingencies of seasons and for fallows; the result is the net produce of which the Government rate of assessment is to be half. Mr. Rundall informs me that, though he has based his calculations on ten acres, he has reduced these results from a farm of 4 ploughs or 36 acres. It stands to reason that a man who has a large farm can work it at a lower cost than one who has only a few acres, and it is not desirable that we should make our calculations on the standard of a pauper-holding. I think we require more information, collected from different portions of the district, as to the expenses of cultivation. It is the result of my experience in Zemindary tracts, that Zemindary ryots, who are men of substance and have larger holdings, as a universal rule pay a higher rate of assessment with far greater ease, (consenting to enhancements every three or five years,) than our ryots do with a low unaltered rate of assessment on their petty holdings, which, as a general rule, are too small to yield profits, and give their occupants scarcely enough for a bare hand-to-mouth subsistence. The Zemindar brings the law of competition into practice in regulating the rates of assessment; we go upon philanthropical principles and theories of abstract justice; we sacrifice a large amount of revenue, and yet our ryots are far worse off in the end. Pauper-holdings are the bane of our administration, and we should best secure the prosperity of the country if we were to fix the rates of assessment sufficiently high, so as to be prohibitive of the existence of pauper-holding. I saw myself how it was last year in Vizagapatam in a season of unusual scarcity, the Zemindary ryots, who were highly assessed, paid their rents without difficulty, and without the necessity for granting any remissions, whereas our ryots, who were much lower assessed, although nearly a quarter of the revenue was remitted, were driven, in some cases, to the utmost straits to meet even that reduced demand. No doubt this was partly due to the Zemindary ryots looking after their own works of irrigation, and our ryots depending entirely upon Government, which did not allow sufficient funds to keep the irrigation works in repair; but it was due also in part to the better class of men that Zemindars secure as their tenants, men who have means at their back, who are able to cultivate on a larger scale, and set the losses of an exceptionally bad season against the profits of a number of good years. In introducing new rates of assessment into a Ryotwary district, I think while it undertakes a landlord's responsibilities, Government should also have some regard to a private landlord's practical aim, which is to make his estates yield a fair profit. I feel convinced that the practical system is the one best suited to secure the prosperity of a district or a country, and that the policy of a maudlin philanthropy which dictates the reduction of assessments beyond what is actually fair and just, below rates which have the sanction of past usage in their favor, is in its results actually injurious to the people. It lifts into the class of landed proprietors, men without capital, who would otherwise find their proper level in the ranks of labor; it encourages the pernicious system of pauper-holdings, and it does an injury to the land, for it prevents its being turned to the best account, which can only be by the outlay of capital. If the rates of assessment are low, every man takes up an acre or two and cultivates on his own account. He prefers this to being a laborer. He brings to his agriculture labor, but no capital, his fields yield consequently a small return, and after paying hi [illegible] nt he has barely left what may be considered equivalent to the wages of labor. [illegible] at man be worse off in the position of a laborer? On the other hand, if [illegible] essment are sufficiently high to prohibit small holdings, then onl [illegible] substance will become landholders, and with large holdings and the free outlay of capital, and the introduction of improved systems of cultivation, the land will yield larger returns, and the wealth of the country be thereby augmented.

8. In connection with this subject, the reduction of our rates of assessment beyond what is expedient, I find one of Mr. Dykes' suggestions is, as regards Atmakur, to strike out the 10 and 8 *tums* classes, and that when there is in a village less than 50 acres of any particular class of land, he would not take it into account, but put it under the head of the next lowest class. I do not see the necessity for this. I should base the rates of assessment on the actual component qualities of the soil tested by kyles, and not upon any generalizing system of productive powers. Besides, it would be very hard that 100 acres of six *tum* land in one village should bear a high rate of assessment, while forty acres of the same land in the next village should only be assessed as four *tum* land, and this has actually been ordered by Mr. Dykes in the villages he has gone through, in which he has reduced 120 acres assessed at 10 *tums* to 6 *tums*, 831 acres at 8 *tums* to 6 *tums*, and 530 acres from 6 to 4 *tums*.

9. And this leads me to remark again the total absence in Mr. Dykes' scheme of any gradation of villages, according to the advantages enjoyed by proximity to high roads, markets, &c. But what is even still more striking is the absence of any gradation of irrigation. One village may be situated under an anicut, and enjoy unfailing means of irrigation; another village may be dependent on a few tanks which depend in a great measure for their supply upon the state of the rainfall. Yet it is proposed to tax both classes of irrigated land the same. Let me put the case this way—the heavy clay soils of a talook like Atmakur are somewhat heavily assessed at, say, 8 *tums*, on a calculation of their productive powers in respect of a dry crop of jonna. These lands are irrigated and assessed at Rupees 4 additional as a water-cess, but these lands are dependent on tanks for their

irrigation. Here, say, we have dry rate Rupees 3+Rupees 4 water-cess; total Rupees 7. But now let us go to the Nellore talook. We find a great prevalence of the arenacious series of soils. These by the standard of a dry crop Paira Jonna are put at 2 *tums*, assessed at 8 annas per acre. Add to this Rupees 4 water-cess, and the Nunjah rate comes at Rupees 4-8-0. But these are most productive Nunjah lands quite equal to those assessed above at Rupees 7, and more than this, these lands are situated under the anicut, and have a permanent source of irrigation. I would respectfully put it to the Board whether such a system of assessment is fair or just to the cultivators of the soil or to Government.

10. I have endeavoured, in the present instance, to be very brief in my remarks. I would only further add that the classification of the villages is rapidly proceeding under Mr. Dykes' scheme, and if this scheme be condemned, the work will have to be done over again. It is, therefore, most important that it should be decided, without delay, on what principles shall the classification and assessment of the district proceed. Here are summed up what appear to me to be the points at issue, upon which the Board have to advise Government to pronounce a final decision :—

First.—Are lands to be classified according to their estimated productive powers in *tums* or bushels, according to a single dry-crop standard, or with reference to the composition and physical properties of the soils?

Second.—Is there to be but one single series of rates of assessment based upon a dry-crop standard with a uniform water-cess of Rupees 4 an acre, or are there to be two distinct series of rates for irrigated and for unirrigated land?

Third.—Are the different new rates of assessment to be introduced at once, talook by talook, as each talook is classified, or is information to be first collected upon a more extended area by actual kyles, and then one system of assessment recommended for sanction for the whole district, or for such large portions of the district, into which it may be found possible to introduce one system?

Fourth.—Is a gradation of villages to be recognized or not?

Fifth.—Is a gradation of irrigation to be recognized or not?

Sixth.—I would respectfully submit whether it is possible for a Collector, with due regard to the performance of all his other duties, to give that attention to the settlement of the district which the importance of the matter most certainly demands. Might I be permitted to suggest to Government a re-consideration of their determination in the matter after two years' experience. If the work be done at a less cost, can it be done as effectively as it would if intrusted to the separate Revenue Settlement Department, whose Officers might be directed to work in each district *in consultation with* the Collector, and so obtain the benefit of his local experience, while they on their part would bring to the work that experience of settlements made in other districts which must be wanting on the Collector's part. If each Collector be left to conduct the classification and assessment of his own district, he has laboriously to go over for himself the same ground that others have passed elsewhere, to make mistakes, and slowly to gain experience. All this could be corrected by the re-transfer of the work to the Revenue Settlement Department.

11. I gave the draft of my letter as above for perusal to Mr. C. Rundall, Special Assistant in the Settlement Department, and requested his views as to the points raised after some six and a half years' experience in the demarcation and assessment work of this district. I enclose a copy of his letter in reply, by which the Board will see that his views coincide very much with my own.

12. I should add that, pending the receipt of definite instructions, I have adopted the suggestion contained in paragraph 11 of his letter, and have authorized the Classifiers, while recording the classification of lands according to Mr. Dykes' system, as regards the productive powers of the soil, to record also the classification of the lands according to the standard of the Revenue Settlement Department, with reference to the constituent qualities of the soil. This will save having to go over the same ground again should a change of system be hereafter sanctioned. As it is, Mr. Rundall estimates that if the system be changed, it will be necessary to go over again the whole of the lands classified during the last twenty-two months, but if done by the same Classifier, he thinks it might be done in about eight months.

13. With reference to paragraph 17 of his letter, I will, if the Board desire it, forward to them a copy of the Circular in the Settlement Department, issued from time to time by Mr. Dykes, explanatory of the details of his system.

14. Finally, I would respectfully urge the desirability of an early decision in the matter, that one system or the other be finally adopted. If once the principles on which the assessment is to be conducted are clearly laid down, the work will progress rapidly and satisfactorily.

From the Special Assistant Collector of Nellore, to the Acting Collector of Nellore, dated 25th April 1867, No. 67-47.

1. With reference to your letter of the 23rd instant, giving cover to draft of a letter you purpose submitting to the Board, with reference to the proposals made by Mr. Dykes for the settlement of the Atmakur talook, I have the honor, as requested, to give expression to my views on the questions raised, and generally as to any other points connected therewith that may occur to me.

2. As regards Mr. Dykes' scheme for the settlement of the Atmakur talook, it would, I think, have been preferable to have furnished details of the actual classification as finally revised, in place of submitting the results of the classification as fixed in the first instance by the Classifiers, their operations being subject to amendment on revision. After the completion of revision operations, the actual details of the classification are available, and are, in my opinion, the figures on which proposals should be based, and the results submitted for the consideration of the Board.

3. Paragraphs 23 and 24 of my letter of the 25th June last contain my views as to the conclusions to be drawn from the numerous experiments made in the different classes of soil into which the land has been divided. Finding the average on the whole of the experiments on the 4 *tum* soils according to the revision of classification to be 3¼ *tums*, I did not, and do not see that we shall be far wrong if we consider the class to be correctly rated at 4 *tums*. I was further inclined to this opinion, from knowing some thirty-two of the experiments on soils thus rated to belong to five villages bordering on Udayagiri, and lying on the Boggeru. In these villages, owing to the indifference of the agriculture for the most part, the yield of the soil is very considerably below the average of the same class in other villages. Mr. Dykes refers to four of these villages when alluding to eight villages on the Boggeru. The thirty-two experiments shew an average result of just 2 *tums*. Some eleven of them were made by Mr. Martin or myself, and do not find a place in the statement given at paragraph 16 of Mr. Dykes' report; but the remaining twenty-one do, and average 2¼ *tums*. Omitting these twenty-one from the sixty-eight experiments in twelve villages noted as yeilding 3¼ *tums*, (6½ bushels,) the remaining forty-seven experiments in the other eight villages average over 3½ *tums* (7 bushels) Of these forty-seven experiments, however, some forty-four, or two-thirds of the whole, appertain to seven villages only, and average 3¾

tums (7½ bushels); and thus the bulk of these particular experiments approximate more closely to 4 *tums* (8 bushels), than to 3 *tums* (6 bushels.)

4. The number of experiments in these five indifferent villages are certainly out of all proportion to those made for the rest of the talook; and by including them with the other experiments, the result has, in my opinion, been unduly reduced. The exceptional results of a few villages should not, I submit, be allowed to affect the classification of the whole talook, and might with propriety be considered separately, if insuperable objections to their consideration with the other villages of the talook exist. Omitting these five villages, and the experiments made under the 4 *tum* class therein, the result for that class, as regards the remaining villages of the talook, is an average of 4 *tums*. The modification of the arbitrary scale adopted might, with advantage, I should say, have been left for consideration, till operations had been so far extended to other talooks, that the question as to the grain value to be determined for each class of soil might be viewed with reference to a more extensive area than one talook.

5. As I do not concur in the propriety of fixing the productive powers of the soils of Atmakur as classified at 2, 3, 5, 7 and 10 *tums* respectively, I consider that the rates of the several classes of soil, save the lower or 2-*tum* class, should have been fixed somewhat higher than Mr. Dykes has proposed. At paragraph 33 of the report of 11th August last, the statement exhibited shews the land classed under 4 *tums* at the classification to be at present paying on the average Rupees 1-5-0 on the area by survey. The rate proposed for this class is Rupee 1 per acre. Actually the soil is paying more than Rupees 1-5-0. The average thus arrived at is unduly lessened in my opinion; and that of the 2 *tum* class unduly enhanced by the present rates in several villages, to which no *paimash* has been extended, being average rates for the whole of the dry lands of the villages. The present average assessment of the several classes of land, in these, and in ordinary villages, should, I think, have been separately rendered; and more accurate conclusions could then be drawn, as to the general incidence of the present rates, viewed by the actual area.

6. In respect to the system under which classification operations have as yet been carried out, and the basis for a settlement has been constructed in this district, I have always held the classification of the soil, in the manner pursued by the Special of Revenue Settlement Department according to the nature and constituent parts of the same, to be the more accurate, fair, and preferable of adoption; the productive powers of the various division of the soils, thereby arrived at, being determined by actual experiments of the standard crops grown; and considering that this method has the sanction of Government, and is that under which a revision of the assessment of some districts has already been carried out, and new rates of assessment introduced with their approval, I feel that Government are somewhat committed to the principles thus generally adopted; and that we should, therefore, be guided by them in dealing with the revision of the assessment of this district.

7. Mr. Dykes' system differs materially from that pursued in other districts, chiefly in respect to the number of classes or divisions into which soils have been classified; for proceeding in accordance with fixed grain values, and fixing these on a graduating scale of 2, 4, 6, and more *tums*, the result has been, for the most part, the division of the soil between the two lowest, or the 4 and the 2 *tum* classes; the bulk of it falling into the latter class. This course has necessitated all soils that cannot be deemed as fully equal to 4 *tums*, being rated and thrown together in one class; and, as far as experience has yet gone, it comprises certainly two-thirds of the soils of the total classified area; and, containing as this class does soils of such varying qualities, all separation of the same for purposes of assessment are precluded by the course that has been adopted, save and except that of soils belonging to the Regada and Red series, which the name of the natural soil helps to distinguish.

8. To treat so large a proportion of the land under two proposals only, necessitates, in my opinion, the imposition of rates that must press heavily on those who hold the poorer soils, and cause as well a sacrifice of revenue; for a mean exists beyond which no proposal could be made for so large a class. The bulk of the land being in this manner equally rated, all that is of a fair description will be lightly assessed, and that of a poor sort heavily so. Villages having an extensive proportion, or consisting solely of poor soils, will fare badly. The rates of 12 and 8 annas for the 2 *tum* class will not, perhaps, press excessively on the ryots of Atmakur; but I feel sure they would do so, if applied to adjoining talook of Udayagiri, and similarly to Kanigiri.

9. This is the view I take of the soils of this class when not affected by irrigation. Look at them under irrigation, and the aspect is much the same; only the relative proportion of the productive power being so much greater under rice, the necessity for a distinct or separate classification of the soils comprised in the classes as at present constituted, is even more manifest.

10. The foregoing will inform you that I hold much the same views as yourself in respect to the system under which the settlement of the district is now being carried out. The absence of any grade of irrigation is a defect that certainly needs to be remedied. As regards any gradation of villages, I did not see the necessity for the same in respect to villages of Atmakur; but shall I anticipate, when it becomes requisite to consider the villages of other talooks with reference to those of Atmakur. I have deemed it essential to refer but briefly, and to confine my remarks to the principal points in the scheme submitted for the settlement of Atmakur.

11. I feel it to be necessary, however, for me to inform you as well of the measures that should be taken to modify the present system of classification. It would be best, I think, to introduce at once that pursued by the regular Settlement Department; and pending the receipt of instructions from the Board and Government, I beg to urge that Classifiers be permitted to record separately the classification of all lands according to the standard of the Revenue Settlement Department. This could be done without any change being introduced, or the present system of classification being altered or departed from, till final instructions on your letter are obtained.

12. Should a change of system be ordered, the anticipation of the same by taking measures that will allow of villages at present under operation being classified according to the standard classification that has the approval of Government, could not certainly be a false step or one to which objection could well be taken. Such a course will save amendment or alteration being requisite to all classification that may be done between this and the time you may receive definite instructions, as to the course to be pursued for the classification of the district.

13. Whilst from the first advocating the modification of the system in force, so as to permit of the productive powers of the different classes of soil under irrigation being duly determined, should instructions for the introduction of a wet assessment be issued, either as regards the whole or any part of the district, I have at the same time pointed out that the system pursued would not admit of any proposals being framed on which a wet or consolidated assessment could be based as regards irrigated land. I still fail to see how any such proposal could be worked out; or how work already done can be assimilated with the mode of classification adopted in other, or settled districts. The whole of the classification has been too much generalized for any such course to be practicable of adoption. For instance, the greater proportion of the soils of the delta villages of Nellore, or altogether perhaps for two-thirds of the villages of the whole talook, would, according to the Revenue Settlement standard of classification, fall under Class V., having three distinctive sorts. Under the system that we have pursued, the whole has been rated at 2 *tums*, whether good, bad, or indifferent; and no means are at hand for distinguishing or separating the distinctive qualities of the same.

14. I note in the margin the area of work that will have been classified in detail from the commencement of operations up to the present time, allowing the outturn for the current month to be some fifty square miles. It aggregates 872 square miles, and has occupied the Classification party for some twenty-two months.

Atmakur	313
Nellore	353
Rapuru	76
Guduru	130
Total ..	872

Although I do not see any mode by which the existing classification can be adopted to the ordinary system without the ground being again gone over by Classifiers, yet, it is quite certain than any alteration of the system involving such a process, would not occupy anything like the period that the original operation has taken. It might, I think, be roughly set down at one-third of the time, or say eight months, provided the same Classifiers, as a rule, who performed the original work of each village, were sent over the ground again.

15. If any assimilation of the two systems is deemed essential, and has to be carried out, it seems to me that Mr. Master's opinion as to the best and most practicable mode of effecting the same should be sought; for his great experience will surely suggest that which may be most feasible and effectual.

16. I consider it my duty further to mention that my knowledge of the Revenue Settlement system of classification is very limited, for I never was engaged on classification operations whilst under the Director of Revenue Settlement. The only system I am practically acquainted with is, therefore, that which, having been adopted here, you see good grounds for condemning. A certain number of the party are, however, equally experienced in both systems. The party consists of one Supervisor, four Head Classifiers, and twenty-five Classifiers. The Supervisor served as Deputy with one of the classification parties in the Godavery and three of the Head, and six of the Classifiers, have as well been Classifiers in the Settlement parties in the other districts. Some ten of the party in all have, therefore, experience of the system; so I do not apprehend that there would be any difficulty in instructing through these men, the other twenty Classifiers of the party.

17. As you propose referring Mr. Dykes' system of classification for the consideration of the Board, it occurs to me that it would be proper to place before them also, the rules that have been issued and explanatory of the system; so that they may have the means of judging in respect to the whole question, for I am not aware that they are acquainted with the details under which the system has been worked and carried on.

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1. In this letter, Mr. Boswell makes his observations on what he considers serious defects in the mode of settlement adopted by Mr. Dykes in the Atmakur talook, and in the Nellore District generally.

2. Mr. Boswell objects especially to the system of classification followed by Mr. Dykes; to his proposed introduction of an uniform water-rate; to the cultivation expenses; and to assessing a single talook before anything is known of the rest of the district.

3. Mr. Boswell will observe from the Board's Proceedings, dated 24th August 1867, No. 5,491, that the Board take much the same view as he does of Mr. Dykes' scheme of settlement. Further remark on these points is, therefore, unnecessary.

4. Mr. Boswell finally suggests that the revision of assessment should again be intrusted to the Director of Revenue Settlement, whose officers should be directed to work in consultation with him. There would be great difficulty in carrying out this arrangement generally, as the department does not contain and cannot now, for the same salaries, obtain officers of the experience and standing of the former Deputy Directors of Revenue Settlement; but in the case of Nellore itself this would not be felt very materially, inasmuch as the change will be little more than intrusting the direction and regulation of the work to Mr. Master, who is willing to undertake it. The Board accordingly resolve to recommend to Government that the Settlement of the Nellore District be completed under Mr. Master's orders, and that Mr. Rundall and his establishment be placed under his directions for this purpose.

5. The difficulties which have occurred in Nellore have arisen from Mr. Dykes having introduced a system of his own, instead of following the established principles of settlement.

6. The Order of Government, dated 12th December 1864, No. 2,243, in effect did no more than intrust the work to Collectors, instead of to the Special Department, and if Mr. Dykes had clearly appreciated his actual position, such results as have followed would never have occurred. In the Tinnevelly District Mr. Puckle, who was for many years in the Settlement Department, is carrying out the work on the principles of that department; but elsewhere circumstances are less favorable for a satisfactory carrying out of the intentions of Government. Collectors have not generally any experience of such work, and owing to changes have often even to acquire local knowledge of their districts. At present, the Collectors of no less than seven districts are new to their charges; and any district may suddenly pass from an officer whose long service in it and intimate knowledge of it would render his conduct of so important an operation as its re-settlement peculiarly valuable, to a comparative stranger. Owing to the adversity of the past two seasons, little or nothing seems to have been done under paragraph 16 of the Government Order, dated 12th December 1864, No. 2,243, Revenue Department; but looking to the circumstances above set forth, the Board consider that it would be well to re-attach one or two Officers to Mr. Master's department, so that he may be able to take up districts where circumstances are adverse to the Collectors undertaking the duty.

7. The Board approve of Mr. Boswell's proceedings as reported in paragraph 12 of his letter, and they will pass separate orders on the subject of the Poollery tax. They do not, however, at all agree in the views set forth by Mr. Boswell in favor of high assessments. These views seem to the Board to be opposed to all principle and experience, and are especially liable to the fatal objection that if carried into practice, the creation of the class of private landlords which is so greatly to be desired, would be rendered impossible.

No. 604. ORDER THEREON, 31st October 1867, No. 2,564.

Land Revenue.

1. The Government have given careful consideration to the Board's Proceedings and the papers submitted by them, and have come to the conclusion that there is no alternative but to adopt the Board's suggestion, and transfer the revision of the Settlement of the Nellore District to Mr. Master, placing Mr. Rundall and the special establishment now employed in that district for Settlement purposes, under his orders.

2. This will accordingly be done.

3. The Government recognize the amount of care and labor which Mr. Dykes has evidently bestowed on the work, but on his own shewing it is plain that no correct classification of the soils, or reasonable estimate of their actual or relative value has been arrived at, and consequently that his conclusions are in great part valueless. It is much to be regretted that his deviations from his instructions and disregard of the experience gained by the special Settlement Department should have led to this unfortunate result, but the Government trust that the loss of time may not prove serious.

4. Much of the *data* that have been collected will be of use to Mr. Master, but he will of course test them before relying on them as a basis for his proposals; and for the classification of the soils he will adopt the system which has been approved by Government, and hitherto adopted in the district of which the assessment has been revised.

5. The Government entirely concur in opinion with the Board that the commutation rate should be deduced from Price Lists for the whole district and not for one talook only. In the Government Order of 12th December 1864, it was laid down that the commutation rate should be fixed on the market prices for a series of years at the chief grain markets, with an allowance for conveyance to them, but it does not appear that any attempt has been made to carry out these instructions in regard to Atmakur talook.

6. The allowance for fallows and risks of season is certainly liberal in the extreme, but the Government do not desire to object to it, if Mr. Master finds it not more than necessary.

7. The cultivation expenses have come out so low that the Board hesitate to accept them, and these will need to be carefully scrutinized by Mr. Master, and tested by comparison with the results obtained in other districts.

8. The standard grains seem properly selected, but the Government cannot accept the proposal to rate the wet lands as dry, and to charge a uniform water-rate without any reference to the nature of the source whence the irrigation is derived.

9. Mr. Dykes has evidently misapprehended the meaning of the technical phrase "unprofitable areas," and if, as is probable, these have not been excluded from survey, allowance must be made for them in drawing up the proposals for the Settlement.

10. It is, however, quite superfluous for the Government to analyse Mr. Dykes' proposals in detail, for his classification of the soils renders it impossible to arrive at any correct estimate of his other processes, the ultimate results being inadmissible.

11. The Government look to Mr. Master to reduce matters to shape and order with as little delay as possible, but they resolve to modify that portion of the Order of December 1864, which required that proposals should be submitted talook by talook. It is evident that this limited area does not afford *data* sufficient for testing proposals which shall apply to the whole or to a main section of the district, and the Government are not prepared to go through the whole detail process for each talook, with perhaps minutely varying results in each, nor do they see that any advantage will be secured by this mode of procedure now that the work is transferred to the Settlement Department. They leave it to Mr. Master to determine whether one set of proposals may be submitted for the whole district, or whether special circumstances render it desirable to report on portions of the district separately.

12. The Government will keep in view the Board's suggestion, that one or two Officers be re-attached to the Settlement Department, but it does not appear that this will be immediately necessary in consequence of the present order as regards Nellore.

13. The Government do not concur in the opinions advanced by Mr. Boswell in his letter of 4th May 1867, regarding rates of assessment and the occupancy of land, but they do not think it necessary to discuss those opinions, as they are not necessarily relevant to a report on the operations of Mr. Dykes in connection with the land settlement of Nellore.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Board of Revenue.
,, the Officiating Director of Revenue Settlement.
,, the Accountant General.

Exd. S. T. Augustin.

the different classes of soil. We then come to the expenses of cultivation. Mr. Rundall's calculations here have been taken on an area of ten acres. He has allowed for cost of bullocks, implements, ploughing, manuring, seed, watering, cutting and stacking, thrashing and storing. To this he adds the cost of feeding stock, and the total is the expense of cultivation, which he deducts from the money value of the grain outturn, *plus* the value of the straw, *minus* the allowance for contingencies of seasons and for fallows; the result is the net produce of which the Government rate of assessment is to be half. Mr. Rundall informs me that, though he has based his calculations on ten acres, he has reduced these results from a farm of 4 ploughs or 36 acres. It stands to reason that a man who has a large farm can work it at a lower cost than one who has only a few acres, and it is not desirable that we should make our calculations on the standard of a pauper-holding. I think we require more information, collected from different portions of the district, as to the expenses of cultivation. It is the result of my experience in Zemindary tracts that Zemindary ryots, who are men of substance and have larger holdings, as a universal rule pay a higher rate of assessment with far greater ease, (consenting to enhancements every three or five years,) than our ryots do with a low unaltered rate of assessment on their petty holdings, which, as a general rule, are too small to yield profits, and give their occupants scarcely enough for a bare hand-to-mouth subsistence. The Zemindar brings the law of competition into practice in regulating the rates of assessment; we go upon philanthropical principles and theories of abstract justice; we sacrifice a large amount of revenue and yet our ryots are far worse off in the end. Pauper-holdings are the bane of our administration, and we should best secure the prosperity of the country if we were to fix the rates of assessment sufficiently high, so as to be prohibitive of the existence of pauper-holdings. I saw myself how it was last year in Vizagapatam in a season of unusual scarcity; the Zemindary ryots, who were highly assessed, paid their rents without difficulty, and without the necessity for granting any remissions, whereas our ryots, who were much lower assessed, although nearly a quarter of the revenue was remitted, were driven, in some cases, to the utmost straits to meet even that reduced demand. No doubt this was partly due to the Zemindary ryots looking after their own works of irrigation, and our ryots depending entirely upon Government which did not allow sufficient funds to keep the irrigation works in repair, but it was due also in part to the better class of men that Zemindars secure as their tenants; men who have means at their back, who are able to cultivate on a larger scale, and set the losses of an exceptionally bad season against the profits of a number of good years. In introducing new rates of assessment into a Ryotwary district, I think while it undertakes a landlord's responsibilities, Government should also have some regard to a private landlord's practical aim, which is to make his estate yield a fair profit. I feel convinced that the practical system is the one best suited to secure the prosperity of a district or a country, and that the policy of a maudlin philanthropy which dictates the reduction of assessments beyond what is actually fair and just, below rates which have the sanction of past usage in their favour, is in its results actually injurious to the people. It lifts into the class of landed proprietors, men without capital who would otherwise find their proper level in the ranks of labour; it encourages the pernicious system of pauper-holdings, and it does an injury to the land, for it prevents its being turned to the best account, which can only be by the outlay of capital. If the rates of assessment are low, every man takes up an acre or two and cultivates on his own account. He prefers this to being a labourer. He brings to his agriculture, labour but no capital, his fields yield consequently a small return, and after paying his rent he has barely left what may be considered equivalent to the wages of labour. Would that man be worse off in the position of a labourer? On the other hand if the rates of assessment are sufficiently high to prohibit small holdings, then only men of substance will become landholders, and with large holdings and the free outlay of capital, and the introduction of improved systems of cultivation, the land will yield larger returns, and the wealth of the country be thereby augmented.

8. In connection with this subject, the reduction of our rates of assessment beyond what is expedient, I find one of Mr. Dykes' suggestions is, as regards Atmakur, to strike out the 10 and 8 *tums* classes, and that when there is in a village less than 50 acres of any particular class of land, he would not take it into account, but put it under the head of the next lowest class. I do not see the

necessity for this. I should base the rates of assessment on the actual component qualities of th soil tested by kyles, and not upon any generalizing system of productive powers. Besides it would be very hard that 100 acres of 6 *tum* land in one village should bear a high rate of assessment, while 40 acres of the same land in the next village should only be assessed as 4 *tum* land, and this has actually been ordered by Mr. Dykes in the villages he has gone through, in which he has reduced 120 acres assessed at 10 *tums* to 6 *tums*, 831 acres at 8 *tums* to 6 *tums*, and 530 acres from 6 to 4 *tums*.

9. And this leads me to remark again the total absence in Mr. Dykes' scheme of any gradation of villages, according to the advantages enjoyed by proximity to high roads, markets, &c. But what is even still more striking is the absence of any gradation of irrigation. One village may be situated under an anicut and enjoy unfailing means of irrigation; another village may be dependent on a few tanks which depend in a great measure for their supply upon the state of the rainfall. Yet it is proposed to tax both classes of irrigated land the same. Let me put the case this way—the heavy clay soils of a taluk like Atmakur are somewhat heavily assessed at, say, 8 *tums*, on a calculation of their productive powers in respect of a dry crop of Jonna. These lands are irrigated and assessed at Rupees 4 additional as a water-cess, but these lands are dependent on tanks for their irrigation. Here, say, we have dry rate Rupees 3 + Rupees 4 water-cess; total Rupees 7. But now let us go to the Nellore taluk. We find a great prevalence of the arenacious series of soils. These by the standard of a dry crop Paira Jonna are put at 2 *tums*, assessed at 8 annas per acre. Add to this Rupees 4 water-cess, and the Nunjah rate comes at Rupees 4-8-0. But these are most productive Nunjah lands quite equal to those assessed above at Rupees 7, and more than this, these lands are situated under the anicut, and have a permanent source of irrigation. I would respectfully put it to the Board whether such a system of assessment is fair or just to the cultivators of the soil or to Government.

10. I have endeavoured, in the present instance, to be very brief in my remarks. I would only further add that the classification of the villages is rapidly proceeding under Mr. Dykes' scheme, and if this scheme be condemned the work will have to be done over again. It is, therefore, most important that it should be decided, without delay, on what principles shall the classification and assessment of the district proceed. Here are summed up what appear to me to be the points at issue upon which the Board have to advise Government to pronounce a final decision:—

First.—Are lands to be classified according to their estimated productive powers in *tums* or bushels, according to a single dry-crop standard, or with reference to the composition and physical properties of the soils?

Second.—Is there to be but one single series of rates of assessment based upon a dry-crop standard with a uniform water-cess of Rupees 4 an acre, or are there to be two distinct series of rates for irrigated and for unirrigated land?

Third.—Are the different new rates of assessment to be introduced at once taluk by taluk as each taluk is classified, or is information to be first collected upon a more extended area by actual kyles and then one system of assessment recommended for sanction for the whole district, or for such large portions of the district, into which it may be found possible to introduce one system?

Fourth.—Is a gradation of villages to be recognised or not?

Fifth.—Is a gradation of irrigation to be recognised or not?

Sixth.—I would respectfully submit whether it is possible for a Collector, with due regard to the performance of all his other duties, to give that attention to the settlement of the district which the importance of the matter most certainly demands. Might I be permitted to suggest to Government a reconsideration of their determination in the matter after two years' experience. If the work be done at a less cost can it be done as effectively as it would if intrusted to the separate Revenue Settlement Department whose Officers might be directed to work in each district *in consultation with* the Collector, and so obtain the benefit of his local experience, while they on their part

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Rev. - 2363/67.

Ed

Encl. in the Proceedings of the Board of Revenue to the Secretary to Government R D dated 24 August 1867 No. 5491-

Nellore Collectors reports on the revision of the Settlement in Atmakur Taluk.

GLOSSARY.

Terms.	Meaning.
Amanikancha .. అమానికంచ.	Land set apart for pasture.
Amudalu... ఆముదాలు.	Lamp oil seeds (Ricinis Communis.)
Aruga... అరుగ.	A kind of grain—(Hin., Kóduro ; Tamil, Varagu ; Bot., Paspalam Scrobiculatum.)
Dante... దంతె.	A rake or harrow according to size.
Dindu... దిండు.	Used for levelling.
Dokudupara... దోకుడుపార.	Hoe.
Fusly... ఫసలి.	The Revenue Year ; it commences on the 1st July.
Gorru... గొర్రు.	Drill.
Gorru... గొర్రు.	An Indian land measure hitherto reckoned, equal to 3⅓ acres.
Gulaka regada... గులకరేగడ.	A description of soil.
Gulakarati Yerra Garuvu... గులకరాతియర్రగరువు.	Do.
Gulakarati Yerra Nela... గులకరాతియర్రనేల.	Do.
Guntaka... గుంటక.	Made with iron for levelling the ground before sowing.
Iswarakora... ఈశ్వరకోర.	A kind of black rice (5 to 6 months' crop.)
Jonna... జొన్న.	A kind of grain—(Hin., Jowaree ; Tamil, Cholum ; Bot., Sorgham Vulgaree.)
Kandi... కంది.	Boot grain—(Hin., Tuvvar ; Tamil, Tovarai ; Bot., Cajanois Indicus.)
Karukésari... కారుకేసరి.	A kind of rice.

Kattubadi... కట్టుబడి.	Village service, primarily Police.
Késarivari... కేసరివరి.	Different kinds of rice.
Kodakésari... కోడకేసరి.	
Kodakésarivari .. కోడకేసరివరి.	
Kondarati Yerra Garuvu... కొండరాతియఱ్ఱగరువు.	A description of soil.
Korra... కొఱ్ఱ.	A kind of grain—(Hin., Kangoni ; Tamil, Tenai ; Bot., Setaria Italica.)
Kudappa .. కుదప.	The act of letting water into a field and flooding it before ploughing—(*Vide* Rompi dukki.)
Kudappa Sannavari... కుదపసన్నవరి.	A kind of rice sown after the field has been flooded and ploughed.
Magani... మాగాని.	Rice cultivation.
Macta... మక్తా.	Rent.
Manikatam... మనికటం.	A kind of black rice, synonymous with the local term Nalla Vari.
Manu... మాను.	A heavy piece of wood drawn over the ground instead of a roller.
Médipálu... మేదిపాలు.	Ryot's share.
Mérah... మేర.	Fees.
Mettaragi... మెట్టరాగి.	Unirrigated or dry Ragi – See Ragi.
Metta Sazza... మెట్టసజ్జ.	Unirrigated or dry Sazza—See Sazza.
Mulum Ragi... ములుమురాగి.	Irrigated Ragi—See Ragi.
Mulum Sazza... ములుముసజ్జ.	Irrigated Sazza—See Sazza.
Padhétum... పదిహేదుం.	15 Tums.
Paira Jonna... పైరజొన్న	Early Jonna.
Palapu Jonna... పాలపుజొన్న.	Irrigated Jonna.
Pantum... పందుం.	10 Tums.
Papadam... పాపడం.	A large kind of harrow with a single row of teeth.

Pasuvulabidu… పశువులబీడు.	pasture for cattle.
Peddasannavari… పెద్దసన్నవరి.	A kind of rice (6 months' crop.)
Pesara… పెసర.	Green Gram—(Hin., Mung ; Tamil, Putcha Pairu ; Bot., Phaseolus Mungo.)
Potti Nallavari… పొట్టినల్లవరి.	A kind of black rice (3 months' crop.)
Putti… పుట్టి.	A grain measure equal to 20 Tums.
Ragi… రాగి.	A kind of grain—(Hin., Ragi ; Tamil, Kevuru ; Bot., Eleuseno Corocana.)
Rompidukki… రొంపిదుక్కి.	The act of letting water into a field and flooding it before ploughing ; synonymous with Kudapa.
Sannavari… సన్నవరి.	A kind of rice (4 months' crop.)
Sazza… సజ్జ.	A kind of grain—(Hin., Bazara ; Tamil, Kambu ; Bot., Penicilana Spicata.)
Tangèdu… తంగేడు.	A kind of tree, the leaf of which is used as manure, (Cassia Auriculata.)
Tota… తోట.	A garden.
Tum… తూము.	A grain measure = to 2 Irasams. Dried Rice. lbs. Avoirdupois. 1 Irasa = 57½ or 57·599 2 Irasams = 1 Tum = 115 or 115·198 20 Tums = 1 Putti = 2,300 or 2303·96
Tuvva Regada… తువ్వరేగడ.	A description of soil.
Ulavalu… ఉలవలు.	Horse Gram—(Hin., Kulti ; Tamil, Kollu ; Bot., Dolichos Uniflorus.)
Velidukki… వెలిదుక్కి.	The act of ploughing up a field after a rain-fall, or literally "plain ploughing," for rice in opposition to "flooding."
Veligada… వెలిగడ.	
Veligada Sannavari… వెలిగడసన్నవరి.	A kind of rice sown in fields dependant on the rain-fall for water.
Vempali… వెంపలి.	A kind of tree, the leaf of which is used as manure, (Tephrosa Purpuria).
Yetum యేతుం.	5 Tums.
Yenamantum… యెనమంతుం.	8 Tums.

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APPENDICES.

No. I. Sketch map furnished by F. C. Puckle, Esq., Deputy Superintendent of Revenue Survey.

,, II. Survey areas furnished by F. C. Puckle, Esq., Deputy Superintendent of Revenue Survey, Nellore.

,, III. Extracts from Form No. 13, Memorandum 21, Settlement Department.

,, IV. Letter from the Special Assistant, Mr. C. Rundall, 22nd June 1866, as to prices and commutation rate.

,, V. Extract from the Register of prices furnished by Mr. Rundall with letter of 22nd June.

,, VI. Extracts from a letter of the 29th June 1865, No. 102, on the Agricultural system of the Atmakuru Taluk, from the late Mr. R. M. Embley, Assistant Director of Revenue Settlement, Nellore, to Mr. C. Rundall do. do.

,, VII. Extracts from the reports of Mr. J. B. Pennington, Mr. H. F. Clogstoun, and Mr. C. W. W. Martin, on experiments made in 1865-66, to ascertain the average yield of the early Jonna crop.

,, VIII. Extract from diaries kept by Mr. J. B. Pennington, Mr. H. F. Clogstoun, and Mr. C. W. W. Martin in 1865-66.

,, IX. Letter from Mr. Rundall, 25th June 1866, together with two of its Appendices marked "Appendix L" and "Appendix O."

,, X. Printed Selections from the Records of the Nellore District. The annual revenue with details as to occupation, average yield, and prices.

,, XI. Accounts of the village of Kondamidi Konduru.

,, XII. Statement showing the villages that have been surveyed with other villages, their area, and revenue.

,, XIII. Statement of the proposed Village Establishment.

,, XIV. Statement showing the proposed establishment for the conservancy of woods, the repair of District roads, and the ordinary repairs and improvement of Public Works of Irrigation.

,, XV. Detailed Statement of the probable results if the revised rates were introduced.

(Signed) J. W. B. DYKES,
Collector.

NELLORE,
11th August 1866.

No. 15.

From J. W. B. DYKES, Esq.,
Collector of Nellore,

To W. HUDLESTON, Esq.,
Secretary to the Board of Revenue.

SIR,

I have the honor to submit the information called for by Government in the 9th, 10th, 11th, and 12th paragraphs of the Order of the 12th December 1864, Revenue Department, No. 2,243, and such further details in respect to classification and occupation as shall, I trust, enable Government to form an estimate of the probable results of the decision they may arrive at. I also do myself the honor to submit an index and a glossary of the local terms used.

POSITION OF THE TALUK AND DRAINAGE.—2. The taluk of Atmakuru lies on either side of the Pennair, and commencing from the eastern ghats stretches half way across the district. South of the river the area is small; on the other side, the taluk extends some distance to the north-east, and this portion is traversed by the Boggeru and Biraperu.

Sketch Map, Appendix No. I.

SURVEY AREAS—*Appendix No. II.*—3. The total area is 395,539 acres, or nearly 620 square miles. Deducting the extent held under the Zemindary tenure and on favorable terms,* leaves 341,460 acres under the Ryotwar tenure, and the subject of this report; and, in addition to this area, the taluk further includes a portion of the eastern ghats that lies between the survey traverse and the boundary of Cuddapah, a tract that is valuable as regards timber and pasturage, but it was difficult to bring within the scope of the Revenue Survey.

* Tenure.	Acres
Zemindary	26,528·22
Favorable...	27,550·81
Total...	54,079 09

INTRODUCTION OF THE SURVEY AREAS.—4. In making the classification, arrangements were made to identify the Survey areas at the same time with the Revenue Accounts; and, by the end of January, such progress had been made, that I felt justified in undertaking to introduce the Survey areas this year, and show, in this report, the real occupation and actual incidence of the present assessment.

ALIENATIONS.—5. In addition to the area alienated by whole villages† there are the minor Inams for service or otherwise; and these alienations in the Ryotwar villages, in the Atmakuru Taluk, are shown by the survey at 28,612 acres, and will be considered subsequently.

† 27,550 acres, paragraph 3.

PUBLIC PURPOSES, AND AREA AVAILABLE FOR OCCUPATION AT THE ORDINARY RATES OF ASSESSMENT.—6. For public purposes, the land that has been set apart is shown in the margin. It will be observed that nearly half the area is occupied by the beds of tanks; 2,874 acres is the area set apart for roads; 107 acres are given for burning grounds, and no land has apparently been claimed where incremation is not the universal custom. It will further be observed, that the area for roads at an average width of thirty feet would give 824 miles, or more than a mile of road for every square mile of country, a liberal

Purposes.		Area Acres.
Building sites...		2,148
Roads		2,874
Drainage...		6,672
Irrigation.		
Storage	13,976	
Supply channels...	1,636	
Distributing channels	1,130	
		16,742
Standing ground for cattle		111
Burning ground		107
		28,654

allowance if the roads were made; and that under the head of Public purposes, including drainage, the total area is 28,656 acres. Under the two heads of Alienations for minor Inams, &c., and Public purposes, the total area* is 57,268 acres, which, deducted from the total area of the Ryotwar villages, leaves 284,192† acres as the area available for occupation at the ordinary rates of assessment.

	Acres.
* 1. Alienations	28,612
2. Public purposes	28,656
Total...	57,268

	Acres.
† Total area of the Ryotwar villages	341,460
Alienations and public purposes	57,268
Area available for occupation........	284,192

OCCUPATION AT THE ORDINARY RATES OF ASSESSMENT.—7. When the Survey areas were originally furnished, some river beds and isolated hills were omitted. The total area of the Ryotwar villages, as then rendered, was 322,591 acres; and, in this report, I propose only to refer to these figures, and consider 265,323‡ acres as the extent available for occupation at the ordinary rates of assessment. What has been excluded will not probably affect the arable area, and the course I propose will save time and trouble, without fear of confusion.

	Acres.
‡ Total area as originally rendered	322,591
Public purposes and alienations	57,268
Remainder ..	265,323

STANDARD CROPS AND CLASSIFICATION.—8. The early Jonna was selected as the standard crop for the taluk. In the revenue fields the grain value thus calculated has been fixed with reference to the different descriptions of soils included in the field, if the soil varied, and their extent. Where the land had been surveyed simply in large divisions, detailed operations were not attempted. The grain values have been given with reference to the general nature of the soil, and the area under consideration, inclusive of alienations, &c., has thus been classified as follows:—

	Acres.
1. Detailed Classification	199,445
2. General do.	123,146
Total ...	322,591

9. Tested by productive powers the land may be said to be divided, according to the present standard of agriculture, into two classes, which have been rated at 4 and 8 bushels, respectively.§ On looking into the details of soils, it will be similarly found that, though thirty different varieties have been recognized and recorded, the bulk of the area, viz., 305,417 acres, is made up as shown in the margin‖. And to these soils, to which I give, for the present, the local names, I will similarly confine my remarks, omitting the fifth, as there are only some 230 acres of it that have been classified for occupation. The first and second soils are varieties of what is commonly called cotton soils; the third and fourth are red soils.

	Acres.
§ 8 Bushels	56,660
4 do.	248,757
Total	305,417

‖ Gulaka regada...	72,359
Tuvva regada	19,742
Gulakarati Yerra Nela	81,328
Gulakarati Yerra Garuva	24,265
Kondarati do	28,539
Total	226,203

EXPERIMENTS—*Appendix No. III.*—10. Last year 288 experiments were made by the Tahsildar and other Taluk officials, to ascertain the average yield of the standard crop; and, fortunately, of these experiments, three-fourths were on the predominating soils under consideration. In the current year, the Settlement Department have continued the experiments. The remarks of Government in the third paragraph of the Order of the 12th December 1861, have been kept in mind. No pains have been spared to ascertain clearly what are the average productive powers a present of the different classes of land to be assessed. Mr. Pennington, the Acting Head Assistant Collector, and Mr. Martin and Mr. Clogstoun, Assistant Collectors, have given me their hearty assistance also in this important duty, and the result has been an addition to our store of information of 512 experiments, of which 367* are available for present purposes.

Soils.	No of experiments.
Gulaka Regada	236
Tuvva do.	65
Gulakarati Yerra Nela	51
Gulakarati Yerra Garuvu	14
Kondarati do.	1
* Total...	367

DIFFICULTIES.—11. Where farming is high and crops are even, it is comparatively an easy matter to ride up to a field and stake out a quarter of an acre that shall be a fair sample. In the Atmakuru taluk it would be difficult to find a decent crop, which, in one part or another, would not give both the rates I at present propose to consider; and in testing produce, there is not only the difficulty of selecting a field that can be considered a fair average of the present standard of cultivation, but the difficulty also, when this selection has been made, of selecting a fair specimen of the field selected, difficulties that are not diminished when those who make the experiments move from village to village in the harvest time, and have little opportunities of ascertaining the stock and capital that have been previously employed. By examining carefully the whole of the cultivation, selecting the crops with the reapers ready to cut it, and taking it, when cut, to a thrashing floor at the tent door to be beat out at once and sifted so soon as the sea breeze sets in, a sufficiently accurate† result of the experiment made will be secured; and this is the course that has been pursued in the experiments I am about to submit. But the difficulties referred to, as regards selection, must always attend every set of experiments and affect any reasoning based on such data. Seldom, if ever, so far as I am aware, has there been an opportunity, in this Presidency, of collecting as many trustworthy experiments of the same crops and harvest as have been collected this year in Atmakuru. They are however singly, but indications of what may be considered, according to the present standard of cultivation, an average crop, and to justify any conclusions being formed, careful consideration must be given, not only to the experiments collectively, but also to any remarkable variations that may be observed.

† To obtain strictly accurate results the grain should be kept longer.

EXPERIMENTS IN 1864-65.—12. With the poor system of agriculture in Atmakuru, when irrigation is not concerned, a fall of rain will affect the crop where the land slopes. A heavy fall washes the seed and manure clean away, should it come soon after the land has been sown. But in 1864-65, the Ryots had no difficulties on this account. The supply was scant, and, as stated in my annual report, the season was not very favorably viewed as a whole. In fact, the crops might have been expected to be below the rates fixed; and that they were not in the lower class, supposing the rates correct, is a proof of what is often asserted, viz., that a little rain is enough for such cultivation. In "Gulaka regada" classed at 4 bushels 47 experiments‡ in 32 villages gave a mean result of exactly 4 bushels. In two instances, north of the river, the crop was a bushel to the acre, and in a third instance, on the same side, 13 bushels; but otherwise the fluctuations were small, and the classification of this soil is in accordance with these experiments so far as they go. In "Tuvva regada," with less fluctuations, 17 experiments§ in 12 villages gave an average of 4 bushels on lands so classed. In "Gulakarati Yerra Nela" there were heavier fluctuations and a higher result; on 34 villages 62 experiments‖ gave an average of 5 bushels to the acre; and in "Gulakarati Yerra Garuvu" 9 experiments¶ in 7 villages gave 3½ bushels. On the lands rated at the higher productive powers, viz., 8 bushels, the results are not so satisfactory. In "Gulaka

‡ Appendix No. III.
Pages 5, 6 and 7.

§ Appendix No. III.
Page 10.

‖ Appendix No. III.
Pages 12, 13, 14, and 15.

¶ Page 16.

regada there is a variation from 2 to 19½ bushels, and an average of 6 bushels on 62 experiments* in 31 villages; in Tuvva regada the yield varies from a half to 19½ bushels, the average being again 6 bushels on 22 experiments† in 17 villages; and in Gulakarati Yerra Nela, with less variations, 4 experiments‡ in as many villages gave the same result. The conclusions to be drawn from the experiments of 1864-65 being that, so far as they go, we are justified in assuming that the 4-bushel land is rated correctly; but the next step in productive powers is from 4 to 6 bushels, and not 8, unless the season affected the better soils, but not the poorer.

EXPERIMENTS IN 1865-66.—*Mr. Pennington and Mr. Clogstoun.*—13. I now come to the experiments of 1865-66, a better season. When this harvest began, (at the end of February,) classification was going on to the north of the river, and the Special Assistant's presence was chiefly required in that part of the taluk. I therefore requested Mr. Pennington to take the southern villages, and Mr. Clogstoun, who had just joined, accompanied him. They traversed the taluk from one end to the other, and made altogether 41 experiments in 11 different villages. Three experiments were made to the north of the river, which they crossed when the harvest was over on their side towards the end of March; and setting aside these experiments, which, by an oversight, were not included when the other details were worked up in the Settlement Department, in 4 bushels Gulaka regada they got an average of 7 bushels§; in Gulakarati Yerra Nela, of 5 bushels; and in 8 bushels Gulaka regada on 13 experiments, varying from 2 to 23 bushels, they got|| an average of more than 9 bushels; and in 2 experiments in 8 bushels Tuvva regada, in one case the result was the grain value fixed, in the other three times as much.

MR. MARTIN'S EXPERIMENTS.—14. Mr. Martin, the Second Assistant, accompanied Mr. Rundall to the north of the river, and made altogether 31 experiments in 9 villages. Here the results were not so favorable. In 4 bushels Gulaka regada 9 experiments were made, and deducting one of these experiments, as an exceptional crop, the average was under 3 bushels. In Tuvva regada on 4 experiments the average was 5 bushels; and in Gulakarati Yerra Nela 7 experiments gave an average likewise in excess of 4 bushels. But in the higher class of 8 bushels, the result was the reverse of what was obtained south of the river. Mr. Martin made 8 experiments in Gulaka regada, supposed equal to yielding 8 bushels the acre, and the average was just over 4 bushels; for Tuvva regada, a single experiment gave exactly the lower class. The villages in which these experiments were made being on the Biraperu and Boggeru; and the 2 villages in which the higher classes were tested on the borders, respectively, of the Kavali and Udayagiri Taluks.

15. The Special Assistant, Mr. Rundall, made 31 experiments in the soils under consideration, and with the same results in the higher class that Mr. Martin obtained. In the lower class in Gulaka regada 7 experiments¶ gave an average of 5½ bushels; in Tuvva regada 5 experiments

gave 4 bushels or the grain value. In the higher class, on the other hand in Karatampad on the Boggeru, 7 experiments in Gulaka regada gave an average of 2¼ bushels; in Dubagunta on this soil it was 5 bushels. In Gudipad the average rose with Mr. Rundall to nearly 7 bushels. But, excluding two exceptional crops, one of which was south of the river, the average, on the whole of his 11 experiments in 8 bushels Gulaka regada, was under 4 bushels. In Tuvva regada 6 experiments gave him a correct average of 8 bushels; but this favorable result, it must be observed, was obtained from experiments on the Pennair; and on the Boggeru, near the Udayagiri taluk, two experiments in this same Tuvva soil gave only 5 bushels.

16. Exclusive of the experiments now given in detail, the Special Department made altogether 277 experiments in the soils under consideration; and these experiments were all made to the north of the river, where the classification was going on. The Supervisor made 49 experiments, the rest were made by the Head Classifiers and others, to whom it was thought the duty could be entrusted. In 4 bushels Gulaka regada the average of 82 experiments was 5 bushels, which must be considered satisfactory; in 19 experiments in Tuvva regada a higher result, viz., 7 bushels was obtained, and the grain values assigned to Gulakarati Yerra Nela, and Gulakarati Yerra Garuvu were supported by results of 5½ and 6½ bushels, the averages of 39 and 14 experiments, respectively. Thinking that the rivers might have something to do with the inferiority noticed in the preceding paragraph in the 8-bushel soil, I have had divided the larger number of experiments made in this description of Gulaka regada by the Settlement Department, with a general average of 6½ bushels, and show in the annexed table the results thus obtained. It will be seen that 68 experiments on the two local drainages of the Boggeru and Biraperu gave an average on either river of 6½ bushels, a result which bears out the conclusions arrived at on the experiments of 1864-65, and is further borne out by 18 experiments in three detached villages that gave an average of 6 bushels; and in the villages on the Pennair, the average of 11 experiments rises to 9 bushels.

Name of river.	Number of villages.	Number of experiments.	Average in bushels.
Biraperu…………	4	24	6½
Boggeru…………	8	44	6½
Total……	12	68	6½
Pennair……… …	4	11	9

EXPERIMENTS MADE IN TWO SEASONS COMBINED.—17. In Tuvva regada also, I may add, 25 experiments gave an average of 8½ bushels. It will, however, be advisable to show, in a tabular shape, the combined results obtained in two seasons by the Permanent Revenue and Special

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* Page 4.

† Pages 8 and 9.

‡ Page 11.

§ Appendix No. III. Pages 32 and 42.

|| Appendix No. III. Pages 25 and 35.

Appendix No. III. Page 32.

Page 38.

Page 24

Gudipadu and Dubagunta.

¶ Appendix No. III., Pages 31, 37, 18, 19, &c.

Appendix No. III. From Page 17 to 44.

Department, and give the information thus obtained, as regards the two classes of productive powers for each class separately.

Name of Soil.	Experiments made in soils rated at 4 bushels.											
	Revenue Department.						Special Department.				Total.	
	1864-65.		1865-66.				1865-66.					
	Tahsildars and others.		The Acting Head Assistant Collector, Mr. Pennington, and Mr. Clogstoun, Assistant Collector.		Mr. Martin, Second Assistant Collector.		Mr. Rundall, Special Assistant.		Supervisor and others			
	No.	Average.	No.	Average.	No.	Average.	No.	Average.	No.	Average.	No.	Average.
		Bushel.		Bushel.		Bushel.		Bushel.		Bushel.		Bushel.
Cotton Soils.												
1. Gulaka regada.	99	4	4	7	8	¾	7	5½	82	5	200	4¾
2. Tuvva regada.	17	4	...	...	4		5	4	19	7	45	5
Red Soils.												
1. Gulakarati Yerra Nela............	62	4½	5	5	...	...	...	...	39	5½	106	5
2. Gulakarati Yerra Garuvu	9	3½	...	...	...	...	...	...	14	6½	23	5
	187	4	9	6	12	3¼	12	4¾	151	6	374	5

When the experiments of 1864-65 were made, the land had not been classified, but the survey numbers of the fields having been recorded, it has since been possible to give the true soils for the experiments. In the same way, when the experiments were made this year, the soils referred to were entered by those who made the experiments, as they had been originally classified, and not as modified on revision, where this had been found requisite. And thus filled up and revised, it will be observed, that 200 experiments in 4 bushel Gulaka regada give an average result of 4¾ bushels; in Tuvva regada 45 experiments give 5 bushels; and in Gulakarati Yerra Nela 106 experiments, and in Gulakarati Yerra Garuvu 23 experiments give the same result. Altogether 374 experiments have been made on the 4-bushel soils under consideration; that they should give an average of 5 bushels is satisfactory. And as regards the 8-bushels land, the experiments that have been made, and are combined in the following statement, are not unsatisfactory. It is true there is a great diversity in the results obtained by the Officers, who assisted me north and south of the river. Mr. Pennington, in 14 experiments south of the river, got 8½ bushels, and Mr. Martin and Mr. Rundall, by a series of experiments in a limited area north of the river, got averages of 4 and 5 bushels, respectively. But taking the Taluk as a whole, the 62 experiments made by the Tahsildar and his subordinates in the previous year give an average grain value, it will be observed, of 6 bushels; and 98 experiments made by the Supervisor and his subordinates in 1865-66, making it 6½ bushels, we have information that, so far as experiments go, is not bad evidences. A closer examination of the experiments leading to opposite results will perhaps explain the variations; and although I propose to defer this examination, still I shall have submitted, for consideration, some brief details of our agricultural system. In submitting the following Statement, I beg to state here that the 160 experiments that have led to the same conclusion, it will be seen hereafter, are reliable :—

Name of Soil.	Experiments in soils rated at 8 bushels.											
	Revenue Department.						Special Department.				Total.	
	1864-65.		1865-66.				1865-66.					
	Tahsildar and others.		The Acting Head Assistant Collector, Mr. Pennington, and Mr. Clogstoun, Assistant Collector.		Mr. Martin, Assistant Collector.		Mr. Rundall, Special Assistant.		Supervisor and others.			
	No.	Average.	No.	Average	No.	Average.	No.	Average.	No.	Average.	No.	Average.
		Bushel.		Bushel		Bushel		Bushel.		Bushel.		Bushel.
Cotton Soils.												
1. Gulaka regada..	62	6	13	9	8	4	11	3¾	98	6½	192	6
2. Tuvva regada...	22	6	1	8	1	4	6	8	25	8½	55	7
Red Soils.												
1. Gulakarati Yerra Nela	4	6	...	...	...	...	...	...	...	...	4	6
2. Gulakarati Yerra Garuvu	...	...	...	...	...	...	...	...	...	...	...	...
General average ...	88	6	14	8½	9	4	17	5¾	123	7½	251	6¼

GRAIN VALUES.—18. I use in this report the English bushel. The local measure of capacity called a tum,* however, is what we have used in the field and in our accounts, and is always used in this District to denote the grain value of land. And, adopting the measure that was familiar to the people, I issued the following order, when we commenced operations in respect to grain values.

Settlement Department, Memorandum, No. 1, Collector's Office, Nellore, 17th July 1866.

* • • •

3. " As it is not worth while to recognize a grain value under 2 tums the acre, and it is " not wise to attempt to decide what will be the average crop for a term of years, on an acre of " land within that quantity, the lowest class of productive powers to be dealt with by the classi- " fiers will be all soils, &c., yielding on the acre according to the present average standard of " cultivation less than an English quarter,† or " 4 tums according to local measures, and " these soils, &c., will be each and severally rated at 2 tums or 4 bushels the acre. In like man- " ner, the next class of soils, ascending in the scale of productive powers, will be all soils yielding " from 8 to 12 bushels, which will be rated at 4 tums the acre, and so on."

* • * •

I issued this order to avoid "minute details," which the Government‡ have condemned as practically of little value, while they entail much delay and expense, and occupy time which would be better devoted to more important operations. And having thus saved the land from being split into half bushels, it will be seen, from the information submitted in the preceding paragraph that, in my opinion, with reference to the bulk of our experiments, this arbitrary scale requires to be modified. It seems that the productive powers do not really double themselves over large tracts; a probability that did not occur to me in the first instance. And supposing that I was correct in taking 4 bushels for my lowest class, (and it would have been difficult to go lower when Jonna 15 years ago was selling at 15 Rupees the ton, or 9 pence the bushel,*) it would have been better as regards the higher productive powers, had I started on a more moderate assumption, and made my next class 6 instead of 8 bushels. I was, however, anxious to separate my classes by a clearly marked line. It is desirable in many respects. It could do no harm. It could be altered if necessary. And the bulk of the experiments, so far as they go, showing that it would not be safe to assume that in the second class there is an increase of more than 50 per cent., I propose to adopt this rate as the rate of increase between these two classes, which is, to a certain extent, in accordance to a formula† that runs in tums and on the Nellore surface measure of a gorru or 3⅛ acres, as follows:—

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* A tum is rather less than 2 bushels. Letter to Board on Weights and Measures, No. 195, dated 22nd June 1866. Half a tum of Jonna weighs 56 lbs.; a bushel of Jonna 60 lbs. Avoirdupois.

† 8 Bushels.

‡ Order of Government, Revenue Department, 12th December 1864, No. 2,243, paragraph 3.

"Yetum,"
"Yenamantum,"
"Pantum,"
"Padihetum,"
"Putti,"

that is to say, from 5 to 8, from 8 to 10 from 10 to 15, and from 15 to 28 tums, or a putti. From 5 to 7½ would be the increase I propose to adopt, and granting we have a little improved in our farming since the Mussalman sat at the thrashing-floor, the Yetum or 10-bushel land at 3⅛ acres the gorru, would represent what we class at 4 bushels the acre; and the Yenamantum or 16 bushels would not be far short of the 6 bushels experiments made in 1864-65 and 1865-66, when the country had been the years of the century under the British rule‡; and, without giving undue weight to these experiments, I think that they may be taken to prove that the lowest class may stand as it is, and the grain value given to the higher class may, with propriety, be reduced for the present to 6 bushels.

19 I have gone at length into these details of measurements, because it is by experiments alone that we can really test the productive powers of the soils to be valued, and it is in proportion, as we succeed by a series of these experiments in fixing accurately *the relative* values, that we shall succeed in the main object of a great and expensive work. If such information can be laid before Government as shall justify *the relative grain values* being fixed in perpetuity, and the assessment be always rated accordingly, much has been done to make capital safe, and a fundamental principle in taxation has been secured. The value of money may change, commutation rates may be altered, the assessment may be raised, and so long as the relation of the rates remains unchanged, no harm done. If an assessment, fixed with reference to the true relative values of the land, be raised, the State must suffer before the capitalist; the labor of the community will not thereby be diverted from the more to the less productive lands. It is when the land is re-examined and re-classified that capital is insecure. And having shown the result of our operations, as regards the four chief soils in the taluk, I beg to close this portion of my report by a statement showing the predominating soils in the taluk, ranged according to their relative areas, and with details as to the total number of experiments made, the total area classified, the results obtained, and the grain values assigned§.

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* It was selling last week in the Nellore Bazaar for 80 Rupees the ton, or 4s. the bushel, which is within a shilling of the average price of wheat in Mark Lane.

† For the Jonna crop.

‡ We are apt to forget how short a time it is since we took charge. The Order is dated 31st July 1801. Its having been carried into effect was reported the 7th of the next month. And a respectable Nellore Ryot applying this week to be relieved of his duties as an Assessor, told me that he was a married man when our rule began, and he had been cultivating his land, and paying the Government revenue ever since.

§ In this statement the 10 and 14 bushels represent what was classified as 12 and 16 bushels, these classes having been reduced with reference to the information obtained as regards the 6-bushel class.

Soils.	[Grain values assigned in Bushels.																				Total.			
	20				14				10				6				4							
	Area.		Experiments.		Area.		Experiments.		Area.		Experiments		Area.		Experiments.		Area.		Experiments.		Area.		Experiments.	
	Detail	General.	Number.	Bushels.	Detail.	General.	Number	Bushels.	Detail.	General.	Number.	Bushels.	Detail.	General.	Number	Bushels.	Detail.	General.	Number.	Bushels.	Detail.	General.	Number.	Bushels
	Acs.	Acs.			Acres.	Acs.			Acres.	Acres.			Acres.	Acres.			Acres.	Acres.			Acres.	Acres.		
Cotton Soils.																								
Regada.																								
1. Gulaka	...	...	...	...	...	...	...	...	257	...	2	13¼	28,009	703	195	6½	38,036	5,381	155	5¼	66,302	6,087	352	8¼
2 Masara	...	...	...	...	52	...	...	...	1,266	391	13	9¾	836	1,302	4	8	171	410	1	4	2,325	2,106	18	7¼
3. Tella	...	...	...	...	208	...	3	15	2,015	166	17	12¼	898	46	3	11	427	...	...	...	3,578	212	23	12½
4. Tuvva	...	...	...	...	...	...	...	...	156	121	9	6¼	7,186	1,445	60	7¾	9,575	956	51	5¾	17,217	2,525	120	6¾
5. Tuvva Banka	50	...	...	...	269	...	...	...	909	...	10	14¼	1,406	...	7	10	60	...	...	...	2,694	...	17	12
6. Other varieties	66	...	2	26	430	...	8	17¾	1,670	551	8	15½	1,906	1,068	4	9¼	553	226	...	...	4,625	1,815	22	17
Other Soils.																								
Nela.																								
7. Gulakarati Yerra	...	...	...	...	...	...	...	...	...	...	...	...	851	...	4	6¼	34,763	45,714	128	5¼	35,614	45,714	132	5¾
8. Other varieties...	...	...	...	...	135	...	...	...	1,432	552	1	13	9,332	1,044	24	12	32,427	8,495	95	7¼	43,326	10,091	120	10¼
Sandy Soils.																								
Garuvu.																								
9. Gulakarati Yerra	...	...	...	...	...	...	...	...	...	...	...	...	280	25	...	...	12,547	11,353	25	6	12,827	11,378	25	6
10. Other varieties	...	...	...	...	...	...	...	...	...	...	...	...	323	...	1	15	11,652	36,008	27	6½	11,975	36,008	28	[illegible]
	116	...	2	26	1,094	...	11	16½	8,055	1,787	60	12	51,027	5,633	302	9½	1,40,211	1,08,546	482	5¾	2,00,483	1,15,966	857	19¼
In the monthly Progress Reports these figures are given																					1,99,650	1,20,419		

The differences shown here, + 833 — 4,453 are probably the result of the changes referred to in paragraph 7.

C

STANDARD CROPS AND COMMUTATION RATES.—20. Exclusive of irrigation, two-thirds of the land cultivated last season in Atmakuru was under early Jonna, a twelfth was under Aruga sown by itself, or with cotton, &c., a smaller portion was under Ragi and Sazza, a twentieth was under oil seeds, and rather more than one per cent. was under the various kinds of pulses. From the information to be given subsequently, it will be seen that these proportions are not those of a single year, that they represent the system usually pursued hitherto in cropping the land in Atmakuru, and Mr. Rundall has, therefore, in his report of the 22nd June 1866[*], on commutation rates, confined his attention as regards dry grains to Jonna and Aruga, though he gives also the prices during the last 60 years of Sazza, Ragi, oil seeds, horse-gram, and green-gram, and provides for their recognition in subsequent calculations. As a history of what has passed since we have been in the District, this register[†] of a local grain market is not devoid of interest. It is instructive, and it tells a tale that many a grain market in this Presidency would repeat, changing a name or two in much the same words. For the first 10 years of the century, when the natives, who had been in power before we came, were still wealthy, and there was a demand for the Commissariat of an Army concentrated in the Carnatic, Jonna stood at 36 Rupees the ton.[‡] The next 20 years saw the markets affected, as the troops spread outwards and less money was spent by those who previously had held a leading position, and supported many followers. There was only a local demand. Prices stood at 30 Rupees. The home or other European markets had little or no effect, as regards food-grains on India. And prices falling, probably from the same causes, from 1830 to 1840 to 26 Rupees the ton, in the next 10 years an impoverished population and the land revenue expended in newly acquired provinces, brought Nellore Ryots as low as they could well go and live. Jonna sold in 1842 and 1843 for 15 Rupees the ton.[§] The average from 1840 to 1850 was 22 Rupees; and then there came a rise. After one or two fluctuations, Jonna rose in 1858-59 to 40 Rupees. It continued to rise till it reached 49 Rupees; and now it stands, it will be seen from the Price List, at 44 Rupees. The other grains tell the same story; and the question to be considered as regards a commutation rate, is, how far we are liable to a return of the prices that tried the country so terribly, and were felt less than 15 years ago[||]. In his exhaustive Report, Mr. Rundall, with reference to the Price List, has recommended that the commutation rate for Jonna should be fixed at Rupees 27-8-0 per Puti, which would be Rupees 118 per Madras Garce;[¶] and he, at the same time, brings to notice that if we were to use the calendar year, our returns would be more trustworthy, and there is nothing to show how the Price Lists are framed. There are no markets. The grain is bought up by dealers at the Ryots' door; and Mr. Rundall thinks that the lists are more probably deductions from retail prices than actual records of wholesale operations. And agreeing with Mr. Rundall that there are these difficulties that, from the way it is framed, the Price List is more likely to be over than under the market rate, and the day may come when the Ryots will have to take their grain to market, a charge for which no deduction, under present circumstances, can be made, it would follow that the rate proposed, which has been fixed in strict accordance to the figures, and the practice pursued hitherto, is as high as could be adopted. There are, however, one or two points in the matter of prices and markets that are not shown by the figures of the Price List, and the Board and Government may think sufficiently established to demand consideration. And should that be the case, and these points be taken into consideration, the rate proposed would be too low. That the value of money has relatively fallen, and the sudden influx of gold in large quantities has affected the price of produce, though the currency of a country be silver, is one point to which I refer; and closely connected with this question in political economy, and, in fact a cause of the change asserted is a second point to be considered, viz., that the Indian market is no longer a mere matter of local demand. These two points being taken into consideration, it may be doubted whether in framing a commutation rate, we are justified in dealing simply with previous Price List, even to preserve uniformity. If we take the figures, we must be prepared to affirm not only that there has been no change in the value of money, but that no new markets have been or are likely to be opened for Indian produce; and should the Board and Government be unwilling to affirm such conclusions, then a higher rate is required than that indicated by a mere examination of the Price List, and I would suggest 30 Rupees the Puti, which would be 128 Rupees the Madras Garce, one and a half Rupees the tum, and 1s. 6d. the bushel. For Aruga, which is about half the value of Jonna, Mr. Rundall deduces from the Price List Rupees 13-12-0 as the commutation rate per Puti, Rupees 58-15-0 per Madras Garce; and thus viewed, this rate is what I also would recommend. Extending the view with reference to the foregoing consideration, the commutation rate might, I think, be safely raised to Rupees 15, which would be Rupees 64 per Madras Garce, 12 Annas per tum, and 9 pence per bushel; and these are the commutation rates I accordingly beg to recommend:—

	Per Garce.	Per Puti.	Per Bushel.
Jonna	128 Rupees.	30 Rupees.	1s. 6*d.*
Aruga	58 „	15 „	0*s.* 9*d.*

FARMING IN ATMAKURU.—21. I will now give a slight sketch of farming in Atmakuru, and submit such details as I possess on the subject. In fact, having given the soils, if I give the climate, I have given much that will lead to a right apprehension of what there is to tax. But, in addition to these elements of prosperity or the reverse, other details are required to explain present results, and show how far agriculture is understood, and true principles acted on in raising the crops that have been measured. And to place these points in a clear light I propose, after giving the rain-fall, to go at some length into the question of fallows, manuring, and rotation, the average area of holdings, and average stock on the land, all of which points require also to be carefully considered in forming conclusions as to actual expenses and net produce.

CLIMATE.—22. In the north of the District we have a fair share of both monsoons. It is a smaller rain-fall, on the whole, than in the Pennair drainage, but better distributed; and the Ongole Ryot is not left more than half the year without work. In Atmakuru the rain-fall is uneven, and the annexed table shows what is recorded as having fallen month by month since 1856.

Average rain-fall of the last 10 years in Ongole.

Monsoon.	Month.	Fall.
South-West monsoon.	May June July August September	11 Inches.
North-East monsoon.	October November December	9 Inches.

Statement showing the rain-fall in Atmakuru, from 1856 *to* 1865.

Years.	Months.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November	December.	Total.
1856...	...	...	...	0·6	3·90	0·50	2·37	3·23	1·68	0·28	8·75	5 89	26 66
1857...	...	...	...	0·15	0·88	3·1	0·74	...	0·62	14·32	12·75	0·25	32·72
1858...	...	...	...	..	1·75	1·37	2·57	...	2·0	20 47	9·29	...	37·45
1859...	0·17	...	...	4·18	0 89	...	10·68	0·98	2·44	2·59	29·59	...	51 80
1860...	...	...	..	...	0·85	0·20	1·22	3·95	2 60	11·47	0 16	0·94	21·39
1861...	...	...	14	...	·75	3 15	0·99	2 09	3·49	1·21	8·3	...	19·85
1862...	1·01	...	...	0·33	1·03	2·68	...	1·9	6·39	5·54	1·48	·0 6	19·61
1863...	...	...	1·70	2 50	...	...	...	3·10	...	10·05	1·60	2 80	21·75
1864...	...	...	...	...	0·7	...	·87	1 90	...	7·06	6·45	...	17·03
1865...	...	..	..	1·54	2 36	2·79	2·40	3 50	1·26	0·73	6·35	4·10	25·03
Average.	·118	...	·18	·9	1·31	1·37	2·18	1·98	2·4	7·37	8·44	1·4	27 32

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[*] Appendix No. IV.

[†] Appendix No. V.

[‡] In referring to markets the Puti is the local measure, with reference to which prices are usually quoted, and 1 Tum of Jonna being equal to 112 lbs., 20 Tums equal to 1 Puti, or 2,240 lbs. equal to 1 Ton.

[§] 9 Pence the bushel.

[||] Price per Ton or Puti.

	RS.
1851-52 1852-53	17

[¶]

	RS	A.	P.
Accurately	117	14	0

It will be seen that the average rain-fall is 27 [illegible]; that the South-West monsoon is only half the fall of the North-East; and that last year, as stated, we were fairly off, and got 25 inches well [illegible], and that the year before we were badly off and only got 17. Looking further into the statement it will be seen that the rain fall is very capricious; that the year before last it was [illegible] of what fell in 1859; and that the only thing tolerably certain is that there will be no [illegible] February, there may be showers in January and March, there [illegible] probably be a [illegible] in April, and about 4 inches in the next three months. The [illegible] variations in the rain-fall shown in 1858 and 1859, I have had checked by the recorded [illegible] neighbouring gauges. In 18[illegible], the fall in November in Atmakuru was 2 inches in excess of the average rain-fall for a whole year. And in 1858, in October 5 inches fell in excess of the total rain-fall for [illegible] year before last. I give in the margin [illegible] borative returns including an exceptional fall in July 1859. And believing that the rain-fall, a matter in which my predecessor, Mr. Elton, took much interest, has been correctly recorded, it follows that so far as climate and agriculture are concerned, Atmakuru is not very well off; the beginning of the South-West monsoon is light, and the whole of this monsoon is not much more than half the later rains.*

Gauges.	Fall.		
	1858.	1859	
	[illegible]	July.	November.
Udayagiri	17	11	43
Atmakuru...	21	10	39
Sangam	19	9	32
Raparu	15	8	35

* South-West monsoon 9 inches.
North-East monsoon 17 inches.

FALLOWS, PASTURE, AND ROTATION.—23. The system of farming pursued in Atmakuru was examined into when the preliminary classification was made by the late Mr. Embley, who, in his Report, gave the agricultural operations there for [illegible] month in the year. He had previously

Appendix No. VI.

Letter from R. M. Embley, Esq., Assistant Director, Revenue Settlement, to C. Rundall, Esq., Assistant Director Revenue Settlement, June 29th, 1865.

classified the Western taluks of Kanigiri and Udaya[illegible], where the people [illegible] and for food for themselves and their cattle on wet cultivation. In [illegible]akuru, Mr. Embley found more attention paid to the Jonna. They ploughed for this [illegible] in September or October and November. It was sown in November, or in the beginning of December, it was reaped in March and thrashed in April. He found that the better class of red soils are not relinquished; but the others are, when they have been worked out, that it took from 5 to 6 years to manure the whole of a Ryot's holding; and there was no regular system of rotation. He further found that two-thirds of the taluk sent their cattle to the hills for the hot weather; and it is as rare for land to be kept as pasturage, as for the Ryots to fallow it at their own expense.

[illegible]

AGRICULTURAL STATISTICS.—24. This year when the crops were measured, our inquiries into agricultural statistics were prosecuted in detail. The cultivation accounts were examined to see what was recorded, as having been done with the land previously. I requested the gentlemen† who gave me their assistance in ascertaining the productive powers of the soil, to assist me in ascertaining the powers of the several soils to produce the standard crop for a series of years. "The history for the last "ten years of well-selected fields in different parts of the taluk, where the accounts are available, "would, I observe, give the required information with precision;" and to the inquiries on this point, further inquiries were added that should show the actual cost of cultivation, as far as it could be ascertained, the usual extent of a holding, the stock on the land, &c.

† To Special Assistant, 31st January 1866.
,, Acting Head Assistant Collector, 1[illegible]th February 1866
,, C. W. Martin, Esq., Assistant Collector, 10th April 1866.

FARMING SOUTH OF THE PENNAIR.—25. South of the Pennair, Mr. Pennington and Mr. Clogstoun found from the accounts that on Cotton soils oil seeds and pulses were occasionally grown to a limited extent for a change; but, as a rule, Jonna had been grown on these soils from time immemorial; that the red soils were almost invariably rotated;* that the average extent of what a pair of bullocks could plough might be taken at 9 acres;† and assuming, with his yoke of oxen and family, that a man of industrious habits could cultivate up to 10 acres, that then the actual cost of cultivation per acre, at present prices, would be Rupees 4 for ploughing, manure, and seed, Rupees 8-8-0 for the man and his family; or altogether Rupees 12-8-0. And taking the details of occupation and stock, as shown in the Diary of these Officers, it will be observed that the proportions vary from 3 acres and 2 buffaloes to 78 acres and 30 head of horned cattle; that to 16 acres of dry cultivation there is an average area of 2 acres of rice and 1 acre irrigated from wells; and finally, that taking the stock all round, the horned cattle, on the whole, average 14 head per 19 acres, or about 3 head to every 4 acres; and that in addition to this stock many of the Ryots have sheep and goats, which, distributed over the area made the subject of these inquiries, would give an average of 20 head to the 19 acres, or rather more than a head an acre. Going into details it will be observed that in the 4 bushels Gulaka regada, where Mr. Pennington got 9 bushels,‡ the land had been rotated, though there is also a doubt expressed as to whether the land in question was correctly classed; and in a heavier yield still of 12 bushels the land "had been well manured;" whilst in the higher class of productive powers the explanation of the remarkable variations previously referred to, is, with the aid of these agricultural statistics, equally easy. In the Tuvva land, where Mr. Pennington got 24 bushels, he remarks§ "that the effect of manure was clearly shown in this and the following experiment made in the same field;" "in the one case the yield was at the rate of 24 bushels, in the other rather short of 8 bushels the acre;" and in Topugunta, where Mr. Pennington got a big yield of 23 bushels off 8-bushels land, the Revenue Accounts explain the result. The village has only 5 wells by way of irrigation, and with most of the Ryots, the whole of the farm-stuff is, therefore, of necessity given to the dry crops; and the same Revenue Accounts, I may here continue though somewhat out of place, similarly explain the variations north of the river. When Gudipad has 113 acres of rice, Dubagunta, besides rice, 29 wells irrigating more or less 132 acres, and Karatampad, 16 wells and 121 acres under this cultivation, it is easy to judge where the manure is likely to go, why the dry crops are poor, and the land out of heart.

Appendix No. VII.

* Mr. Pennington to Collector, 10th May.

† Mr. Pennington to Collector, 7th April 1866.

Appendix No. VIII.

Appendix No. VIII.

‡ Experiment No. XXIX.

Appendix No. VIII.

Experiment No. XXXII

§ Experiment No. VI.

FARMING NORTH OF THE PENNAIR.—26. Mr. Martin was not able to enter into the detailed inquiries made south of the river, but he came to general conclusions on the subject. He was of opinion that the people in the villages he saw, were too poor to cultivate the land examined properly; that 4 bushels is about the yield per acre from any ordinary land under the system they pursue; and that the average size of the holdings may be taken at 22½ acres, and the actual cost of cultivation would be about Rupees 1-4-0 per acre.

Appendix No. VII. to Collector, dated 7th May 1866.

[illegible]

ALLOWANCE FOR ROTATION, FALLOWS, AND BAD SEASONS.—27. The Special Assistant examined into the history of 112 fields, for which he got from the cultivation accounts the details of 698 crops; the Supervisor and the Senior Head Classifier in the Special Department increased this store of information by 115 fields and 865 crops; the total number of crops noted, including the inquiries previously referred to, being 1,972 on 291 fields, and working up all this information separately and collectively, Mr. Rundall has been able to compare these results with the inquiries made by classifiers, who were entrusted with the measurement of the crops, and ascertained in accordance to orders, the history of some 350 fields, the details the classifiers collected, being limited to the last 4 or 5 years, and found, when compared, to correspond fairly with the information obtained for the longer period. All this detailed information has, however, been collected, it must be remembered, with reference chiefly to the lands on which Jonna was grown this year; and keeping this fact in mind, and that fallows at the Ryots' expense, though not a part of the agricultural system, are better than the land being relinquished, and to be provided for, Mr. Rundall has drawn up a statement showing for every soil the crops to be taken into consideration to obtain a "mean of the averages," and the deduction to be made for fallows and contingencies of season, which latter deduction is calculated at one bad year in six. The following abstract shows the results, and that Mr. Rundall would recommend that for the cotton soils under consideration the allowance should be 33 per cent., for the red soils 40 per cent.

Appendix No. IX.

Order of Government, Revenue Depatment, December 12th, No. 2,213, paragraph 9.
Appendix No. IX., page 38.
Order of Government, 12th December 1864, No. 2,213, paragraph 9.

Soils and grain values assigned.		No. of years under Jonna and Aruga.		No. of years in which one year should be allowed for fallow and for a bad season.				Total deduction under Column 3.	Proposed allowances for fallows and bad season.
		Jonna.	Aruga	Fallow.		Bad season.			
Names.	Bushel.	Years.		Year.	Per cent.	Years.	Per cent.	Per cent.	Per cent.
Cotton Soils. 1. Gulaka regada ... ... 2. Tuvva regada	6	3	1	6	16	6	16	32	33
Cotton Soils. 1. Gulaka regada ... ... 2. Tuvva regada	4	2	1	5	20	6	16	36	33
Red Soils. 1. Gulukarati Yerra Nela... 2. Gulakarati Yerra Garuvu.	4	1	2	4	25	6	16	41	40

COST OF CULTIVATION.—28. Mr. Rundall has also gone at great length and accuracy of detail into the cost of cultivation. The course prescribed by Government in the 11th and 12th paragraphs of the Order of Government of the 12th December, has been strictly adhered to and the results obtained I again give in an abstract shape for the soils under consideration. Mr. Rundall has not taken present prices. He has drawn up the statement with reference to the commutation rates proposed; and thus viewed, the average cost per acre may be taken at 1 Rupee, 12 Annas.

Enclosure to Appendix No. IX., headed Appendix L.

[illegible]

Extract from a Statement showing the estimated cost of the cultivation of ten acres of Jonna on the several classes of soil met with in the classification of the Atmakuru Taluk.

Particulars of the class of soils, and the quality.		Cost for bullocks.	Cost for implements.	Cost for ploughing.	Cost for manuring.	Seed expended.	Cost for watching crop.	Cost of cutting, carting, and stacking.	Cost of thrashing out crop.	Cost of storing crop.	Total of cost for the 10 acres.		Cost in money and in grain for the 10 acres, commuting at Rs. 30 per putti.		Cost per acre in money.	Cost per acre in grain.
											Columns 1 and 2.	Columns 3 to 9.	Money.	Grain.		
Cotton Soils.	Bushel.	RS. A. P.	RS. A. P.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.
1. Gulaka regada. 2. Tuvva do.	6	5 8 4	2 7 2	1 17	0 20	0 20	0 16	1 3½	1 20	0 2½	7 15 6	6 24	18 6 6	12 7	1 13 5	1 6
1. Gulaka do. 2. Tuvva do.	4	5 2 6	2 4 8	1 17	0 12	0 20	... ...	1 0	1 17	0 2	7 7 2	5 18	16 0 5	10 17	1 9 .8	1 2
Red Soils.																
Gulakarati Yerra Nela. Gulakarati Yerra Garuvu.	4	5 15 10	2 13 10	1 17	0 20	0 20	... ...	1 0	1 17	0 2	8 13 8	6 1	17 14 7	11 24	1 12 8	1 5
														Average.	1 11 11	1 4

N. B.—Mr. Rundall's rates are higher, as the cost of cutting, carting, stacking, thrashing, and storing, have been reduced in the higher class, with reference to proposed reduction in yield.

FURTHER CONSIDERATIONS AS TO ALLOWANCES TO BE MADE AND COSTS INCURRED IN FARMING.—29. When thousands of acres are to be rated at a yield of 4 or 6 bushels, that the mean of the average of the crops grown should not much affect the question is to be expected; but whether one in six years is a sufficient allowance for bad seasons requires further consideration. It may be a fair average, and enough, if the bad years came evenly. But granting the rate assumed is correct, do the bad years come evenly? Since 1860 we have had 5 bad years in succession, as shown in the margin.* These years have been described in the Annual Report for the whole District as "not favorable;" "worse even than last;" "bad though somewhat better than in the previous year," and "very unfavorable;" and supposing there are men of substance who could meet this continued pull on their resources with prices at the commutation rate, and the dry crops are not so much affected by a short supply as might be expected, as regards the bulk of the ryots, and questions of pasturage and stock, is it to be expected that 16 per cent. would meet the loss. With *cattle disease* for a common occurrence, and the burden of our monthly and annual, reports, are the contingencies of stock not as necessary an element in a ryot's calculations of probable losses as contingencies of season? The Government refer to "the value and keep of stock," but do not refer as regards cattle to the deductions to be made for contingencies from disease. And whilst Mr. Rundall's calculations necessarily differ from Mr. Pennington's, in consequence of the former Officer having taken the commutation rates, the latter present prices in regard to losses of stock, the estimate of both Officers should be raised; and in two other respects, it may be urged that Mr. Rundall's expenses are too low. He has neither allowed interest on the capital sunk in the purchase of the bullocks, in the first instance, which at 12 per cent. is more than the share of the original cost debitable to the year's cultivation, nor has he debited his manual labor for the year. He has taken this latter charge for the crop, thus assuming that there is a labor market, the want of which is, perhaps, the most certain fact in any calculations that could be made as regards cost of cultivation. On the other hand, assuming that the cattle are employed solely for dry grains, we assume that, for the rest of the year, they are idle, unproductive capital, an assumption that the average two acres of rice would at once upset. And thus, as regards contingencies, or the actual costs of cultivation, as put down either by Mr. Pennington or Mr. Rundall, it will be observed that there are good grounds for increasing the deductions to be made from the gross produce, and when this deduction has been made, no reliance can be placed on the actual result. The expenses of cultivation, if we would go beyond a relative proportion, could only be ascertained by individual inquiries and rates varying for every village according as it has or has not the advantages of irrigation from public sources.

* Average rain-fall of 10 years 27 inches.

Actual rain-fall.

Years.	Inches.
1860	21
1861	19
1862	19
1863	21
1864	17

THE MOIETY OF THE NET PRODUCE.—30. Adhering to the Orders of Government, and valuing the straw as a separate asset, Mr. Rundall has deducted the cost of cultivation from the several crops grown, and thus arrived at a mean value of Rupees 4-8-5 for the cotton soils under consideration and rated at 8 bushels, Rupees 1-5-9 for the same soils at 4 bushels, and Rupees 1-3-10 similarly for the red soils. Reducing these values by one-fourth in the higher class, as our experiments show that 8 bushels is too high a rate, and making the deductions† proposed by Mr. Rundall for fallows and bad seasons, I show in the following Statement the value of the net produce per acre and of the moiety that is the Government share, and in the hands of the Ryots it will be remembered, has to pay the interest on the bullocks support labor all the year round, enable them to meet sickness, whether among their cattle or themselves, and a succession of bad seasons should they so come:—

Paragraph 13 of the Order of Government, Revenue Department, No. 2,243, 12th December 1864.
Appendix No IX.
Paragraph 33.

Name of soil and grain value assigned.		Mean value of produce less cost of cultivation.	Deductions for bad seasons and fallows.	Remainder or net produce.	Moiety of net produce for Government.
Name.	Bushel.	RS. A. P.	Per cent.	RS. A. P.	RS. A. P.
Cotton Soils.					
1. Gulaka regada ... 2. Tuvva do. ...	6	3 0 4	33	2 0 5	1 0 2
1. Gulaka do. ... 2. Tuvva do. ...	4	0 14 6	33	0 10 7	0 5 3
Red Soils.					
Gulakarati Yerra Nela. Do. Yerra Garuvu.	4	0 13 3	40	0 8 0	0 4 0

FURTHER CONSIDERATIONS ON NET PRODUCE.—31. It may be considered that when the land gets no fallow we are not justified, although the Government have ordered it, in making a deduction on this account. The crop would be better on the cotton soils, were the land allowed a rest. But this does not apply to the red soils; a fallow for these soils is necessary; and, whether as regards cotton soils or red soils, were we to include the charges I have referred to as fairly debitable, in the 4, bushels land, there would probably be no net produce at all. A sick household, or the loss of a bullock must send the Ryot to the money-lender. The same result has been shown by Mr. Pennington, in his letter of the 7th April,* taking present values and a holding of 10 acres of Jonna, which, "with industry" "and the aid of his family," is about as much as a man cultivates. A pair of bullocks Mr. Pennington supposes to cost 160 Rupees, and, with an average working life of 12 years, this gives a charge per annum of 13 Rupees. The interest on the money thus sunk at 12 per cent. would be 20 Rupees. Manuring and seed, &c., raise the cost to Rupees 40. And, leaving the straw to balance the keep of the bullocks, Mr. Pennington assumes the land to yield 16 *bushels* the acre, and the man to have a family of a wife and three children, and then shows that this would leave him 36 Rupees as the value of the net produce, and 18 Rupees as the Government moiety on 10 acres. But, if the produce fell to 8 bushels the acre, as the bullocks cost the same, and the man and his family must live, the net produce, it is shown, becomes nought. Mr. Pennington allows 84 bushels, or 10 quarters and a half of Jonna per annum, as the least that could be given for the support of a man, who is to accumulate capital and meet losses. And, thus estimated, supposing the season to be an average season, and the yield 8 bushels, the following are the results:—

Appendix No. VII.
*Paragraph 10.

	Bushels.		Rs.
10 Acres at 8 bushels, and 1 Rupee the bushel, 40 Rupees the putti or ton =	80	=	80
Subsistence for a Ryot and his family...	84	=	84
Net produce... 0 Net loss			4

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† The costs of cultivation, as given by Mr. Rundall, have also been retained, as the proposed rise in the commutation rate balances the diminished cost of harvesting, &c.

This gives the *land-holder* at the prices taken, as subsistence for himself and family, 7 Rupees a month, the wages of ordinary labor; and, if it be thought that the cattle are priced too high throughout these calculations, this does not affect the present question, for there is not enough to feed the man and, his family let alone, meet in any way the cost of the cattle; and if we come down to a yield of 6 bushels, or 4 bushels the yield on 60,000 acres, the case is clearer still. There is no provision made for sickness amongst the stock or the human beings, or for the vicissitudes of seasons; and yet, the results are fairly worked out, and *so far as our calculations go*, Mr. Pennington is fully justified in affirming that the poorer lands cannot be worked *save at a loss.*

32. It is the system we pursue in calculating the net produce that is in fault. In the calculations given in the preceding paragraph, Mr. Pennington is unable to show, as part of the produce, what really enables the Ryot to pay his assessment. Mr. Pennington has only to deal with the grain and the straw according to present orders; he cannot refer to the stock and the dairy. In Ongole, a Ryot looks on a young bull-calf as 100 Rupees in his pocket; and although further south cattle are smaller and less valuable, still young stock fetch fair prices. There is the ghee, there is the increase on the 20 sheep for the butcher, and there is much else that could not be brought to market without having the arable land to fall back upon. There is again the garden produce, the results of fair manuring on the rice land; and as it has been seen that these resources cannot be included in average *grain values*, it becomes necessary to consider whether a fixed assessment on the land should any longer be imposed on the same principle as a crop is shared. It might be argued on general grounds it is scarce advisable that the land revenue should be fixed according to a certain share of the net produce when the Indian markets have a wider range than hitherto. It is good for the capitalist to have the assurance of Government that he shall never be taxed more than a moiety of his net produce, supposing that could be obtained by a grain value. It may be doubted whether to charge up to 50 per cent. would always attract capital, or with much land unoccupied is a wise policy. And when passing from general grounds to the results of the present inquiry, we consider what the results would be were we to accept the ascertained grain values, and how many sources of error are likely to affect our calculations as to "net produce;" it may, I think, be affirmed that these grain values cannot be taken as quantitative, that the net produce must be otherwise arrived at, calculated on a broader basis than the crop, and our results are *qualitative*, necessary to secure the even incidence of the land tax, to prevent labor and capital being diverted from the more to the less productive lands, but not what the Government can, with propriety, act on, in fixing the amount that shall be paid per acre.

AREA OCCUPIED AND AVERAGE ASSESSMENT.—33. I beg to submit the following Statement, showing the total area occupied, the predominating soils, and the average assessment, &c. It will be observed that on 19,872 acres of 6 bushels Gulaka regada, the average assessment is 1 Rupee 4 Annas, and on 4,874 acres Tuvva regada of the same grain value, 1 Rupee 7 Annas, against 1 Rupee 2 Annas value, in either case of a moiety of the net produce, as ascertained during the harvest of 1864-65 and 1865-66; and similarly on 4-bushels-land the average on 22,269 acres Gulaka regada, and 6,699 acres Tuvva, is 1 Rupee and 1 Rupee 1 Anna, and on 18,130 acres Gulakarati Yerra Nela, and 6,571 Yerra Garuvu, Annas 11 and 12 respectively, against net produce values, when halved of 5 Annas and 3 Pies for the two cotton soils, and 4 Annas for the red.

SOILS.	GRAIN VALUES ASSIGNED IN BUSHELS.																				TOTAL AREA OCCUPIED		
	20				14				10				6				4						
	Dry.		Rice.		Dry.		Rice.		Dry.		Rice.		Dry.		Rice.		Dry.		Rice.				
	Area.	Average assessment.	Area.	Average assessment.	Area.	Average assessment.	Area.	Average assessment.	Area.	Average assessment	Area.	Average assessment.	Area.	Average assessment.	Area.	Average assessment.	Area.	Average assessment.	Area.	Average assessment.	Dry.	Rice.	Total.
	Acs	RS. A.	Acs	RS. A	Acs	RS. A.	Acs.	RS. A.	Acres.	RS. A.	Acres.	RS. A.	Acres	RS A	Acres	RS A	Acres	RS A	Acres.	RS A.	Acres.	Acres.	Acres.
Regada or Cotton Soils																							
1. Gulaka	..	.. ..	..	.. ..	..	.. ..	..	.. ..	218	1 11	75	5 4	19,872	1 4	891	4 9	22,269	1 0	844	4 3	42,359	1,810	44,169
2 Tuvva	..	.. ..	..	.. ..	..	.. ..	..	.. ..	220	1 9	99	4 14	4,884	1 7	518	4 3	6,699	1 1	263	3 3	11,803	880	12,683
3. Tella	..	.. ..	..	.. ..	166	2 4	62	5 12	1,451	1 11	84	5 5	684	1 6	51	3 6	211	1 4	11	4 1	2,452	211	2,663
4. Tuvva Banka.. ..	..	. ..	29	8 10	..	.. ..	144	7 8	131	1 10	750	4 12	86	1 10	990	3 14	3	1 0	30	2 8	220	1,943	2,163
5. Masara	..	.. ..	..	.. ..	49	1 13	3	4 0	934	1 8	76	3 12	428	1 6	52	3 6	72	1 1	26	1 15	1,483	157	1,640
6. Other varieties ..	..	.. ..	56	5 5	6	1 8	256	5 9	82	2 1	963	5 6	337	1 7	673	4 6	56	0 15	46	2 11	481	1,994	2,475
Red Soils.																							
7. Gulakarati Yerra Nela	..	.. ..	..	.. ..	..	.. ..	..	.. ..	..	.. ..	..	.. ..	314	1 5	307	4 7	18,130	0 14	1,129	3 9	18,444	1,436	19,880
8. Other varieties.. ..	..	.. ..	..	.. ..	..	.. ..	66	6 9	46	1 8	945	5 12	591	1 10	6,243	4 7	11,761	0 15	6,176	3 13	12,398	13,430	25,828
Sandy Soils																							
9 Gulakarati Yerra Garuvu	..	.. ..	..	.. ..	..	.. ..	..	.. ..	..	.. ..	..	.. ..	25	1 11	48	4 0	6,571	0 12	361	3 13	6,596	409	7,005
10. Other varieties ..	..	.. ..	..	.. .	..	.. ..	..	.. ..	..	.. ...	..	.. ..	137	1 7	104	5 4	3,791	0 14	272	4 7	3,928	376	4,304
Total ..	..	.. ...	85	6 7	161	2 1	531	6 3	3,082	1 10	2,992	5 4	27,358	1 5	9,877	4 6	69,563	0 15	9,161	3 13	1,00,164	22,646	1,22,810

THE ADJUSTED LAND REVENUE AND POPULATION.—34. In the following Statement it will be seen that the adjusted revenue from the land held in Atmakuru, at the ordinary rates of assessment, has averaged in the preceding five years Rupees 1,48,674. To this average must be added Rupees 3,546, the average sum collected on certain villages, which were formerly rented, and into which I introduced the Ryotwar tenure from 1864-65. And the adjusted revenue on the arable area of the Ryotwar villages of Atmakuru, from 1860-61 to 1864-65, both years inclusive, thus gives an average of Rupees 1,52,220; in reality it is a little less than Rupees 1,52,220, as in the rented villages the rents were a gross sum, and included the cattle tax or pulari, as it is called; excluding the rented villages, the pulari for the taluk for the same period, it will be observed, has averaged Rupees 13,767; and including quit-rents, Rupees 5,609; on these several items, the adjusted Land Revenue is Rupees 1,70,000, or 3 Rupees a head to a population of 58,130.

Ordinary Rates	1,48,674
Rents	3,546
Total...	1,52,220

Adjusted revenue for the last five years, and population according to the last census.

YEARS.	LAND REVENUE.						
	Ordinary rates.	Rents.	PASTURE RENTS.			Favorable rates.	Total Land Revenue.
			Farms.	Makta, &c.	Total.		
	RS.	RS.	RS.	RS.	RS	RS.	RS.
1860-61	1,29,334	3,493	1,940	14,314	16,254	4,847	1,53,928
1861-62... ...	1,29,622	4,035	1,940	15,326	17,266	4,986	1,55,909
1862-63... ..	1,37,251	4,028	1,940	11,131	13,071	6,214	1,60,744
1863-64... ...	1,53,118	2,451	1,881	9,592	11,473	6,275	1,73,317
1864-65... ...	1,94,046	......	1,911	8,863	10,774	5,726	2,10,546
Average...	1,48,674	3,516	1,922	11,845	13,767	5,609	1,70,888
Population... 58,130							

PULARI.—35. In my Report of the 26th October 1861, I have described the mode in which pulari is levied, and in a subsequent Report of the 15th September 1864, I have recorded further information that I had gained on the subject, and the difference there was between this tax, levied as a rent, and a cattle tax, under the names of "Makta" or "Yenika." The statement, given in the preceding paragraph shows that Rupees 1,922, being the average collection under the legitimate head of rents, Rupees 11,845, are collected as a cattle tax under the other two heads, and whether the cattle have been grazed on the common pasture, or fed in the Ryot's stock yard. And the Board having, in their Proceedings of the 13th July 1865, concurred in the objectionable nature of the tax, and contemplated its abolition on the introduction of the revised assessment, I will leave the Rupees 11,845 to be disposed of in proposing the new rates on the arable area, and will consider here the nature of the pasture on which the rent of 1,900 Rupees is levied.

WOOD AND WATER.—36. There is a good deal of wood in the unsurveyed tract; there is also a fair share in the west of the Taluk generally; but to the eastward the country is bare, and the taluk on the whole, badly off in this respect. North of the river, on examining some 17 square miles with reference to rates, this area was found to carry two-thirds of a tree to the acre; excluding wood lands for the whole taluk, we have not more than a tree and a half; and as regards the wood lands, in my reply* to the Board's Proceedings of the 3rd March, I have shown the heavy pull there is on the natural wood for green-food for cattle as well as fuel. The pasture farms, I propose to consider, are the wood lands. The 1,922 Rupees is the rent paid for these wood lands at the rate, in round numbers, of half an Anna the acre; and with a scant and failing supply of fuel, it is clear, so far as wood lands are concerned, that our pasture farms, as at present constituted, are a blunder in every way. They do incalculable harm; and the wood in seven years, as fuel, would be worth 5 Rupees, our present gains in the same period 3 Annas 6 Pice. It does not do to forget, however, that, with a large head of cattle, this supply of green-food at a critical season is an advantage that the Ryots, unless they are furnished with other sources of supply, would feel the loss of severely. Conservancy of the wood lands, however necessary in other respects, would be and must be a pull that the abolition of the cattle tax could by no means meet. It is a question of food, not money; and one excellent step towards meeting the difficulty has been already taken by the Board and Government, in freeing well cultivation under certain conditions from a special tax. The Ryots have thus the means of growing green-food themselves; and any further relaxation of existing rules in respect to the well tax that might be fair to other interests would be so much more help.

37. The depth from which spring water has to be lifted for cultivation diminishes eastward and near the Pennair. Varying from 21′ to 23′ in the western portions of the taluk, and rising in the northern from 25′ to 29′, in the villages near Sangam, where the Beraperu joins the Pennair, it is 17,′ to 18′ and for the whole taluk 21′ which, of course, is an average depth that affects the price at which green-food can be obtained for cattle by means of wells. It considerably increases the cost, and so places the taluk at a disadvantage with others, where the water carrying strata are nearer the surface. But when the well cultivation comes into full play, as the hotweather begins, there is little else for labor to be employed on. The wells economize what otherwise would be lost; and with reference to the effect produced* on agricultural operations, generally, as regards lessening the cost of production, and the immediate assistance that would be thus given to the Ryots when their cattle are refused access to the woods, I will do myself the honor to submit for this taluk a somewhat liberal application of the well rules, after I have given the details of the irrigation from public sources of supply.

TOTAL REVENUE.—38. With a total revenue rising in five years from 1,61,000 Rupees to 2,15,000 Rupees,† it will be observed from the annexed Statement, that the Income Tax, which was Rupees 1,800, and abolished in 1863-64, came back in the following year in a rise on the land revenue more easily and equitably collected, of 37,000 Rupees. And as regards the details of what is "not included in the preceding," it will be seen, subsequently, that some of these items are a charge on the land that should be contemplated in framing the revised rates of assessment. And I must here explain that the revenue from the Zemindary villages, &c., is not given, being part of the general Peishkush, though the population and Income Tax has been included.

Adjusted Revenue for the last five years, and population according to the last census.

YEARS.	ADJUSTED REVENUE.							Income Tax.	Not included in preceding.	Total adjusted revenue.
	Ordinary rates.	Rents.	PASTURE RENTS.			Favorable rates.	Total Land Revenue.			
			Farms.	Makta, &c.	Total.					
	RS	RS.	RS.	RS.	RS.	RS.	RS	RS.	RS.	RS.
1860-61	1,29,334	3,493	1,940	14,314	16,254	4,847	1,53,928	4,370	3,484	1,61,782
1861-62	1,29,622	4,035	1,940	15,326	17,266	4,986	1,55,909	5,919	2,870	1,64,698
1862-63	1,37,251	4,208	1,940	11,131	13,071	6,214	1,60,744	2,763	3,166	1,66,673
1863-64	1,53,118	2,451	1,881	9,592	11,473	6,275	1,73,317	1,805	3,435	1,78,557
1864-65	1,94,046	.....	1,911	8 863	10,774	5,726	2,10,516	....	4,578	2,15,124
Average..	1,48,674	3,546	1,922	11,845	13,767	5,609	1,70,888	3,714	3,506	1,77,366
Population... 70,438										

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* From Collector of Nellore to Board, 2nd June 1866.

* Paragraph 52 of the Report.

† For the whole District these figures are

	RS
1860-61	29 39,200
1864 65	36,78 516

And in Appendix No. X. will be found the revenue from the date on which the District was ceded.

“NOT INCLUDED IN THE PRECEDING.”—39. Taking the details of 1864-65 to avoid the trouble of forming averages, I show in the margin the items that make up a total sum of Rupees 4,578 under the head of “not included in the preceding.” It will be observed that 2,500 Rupees are fees leveid partly for the better keeping of our revenue accounts,* partly for the better watch and ward of certain villages,† partly for the improvement of the country,‡ and that of the rest of the 4,578 Rupees the Road Fund is Rupees 1,265, taxes on fruit trees, which include dates and palms, is a sum of Rupees 450, and Rupees 290 are collections made after the annual demand had been adjusted. In other words, 2,500 Rupees in round numbers is what the Ryots pay now in addition to the Land Revenue shown, and will have to pay in future, and 1,250 Rupees represents a burden on the land that is liable to be increased to the extent of 3 per cent. on the total area in occupation, exclusive of the rates to be fixed.

	RS.
Stalakarnam's Russums	1,583
Urcawar do.	803
Bala Ravas do.	195
	2,581
Road Fund	1,265
Date and Palmyras	431
Other fruit trees	14
	445
Cultivation after adjustment	250
Water-rate do.	37
	287
Total	4,578

PRESENT RATES.—40. The taluk of Atmakuru is made up of villages from the old Revuru taluk, and the Sangam, Udayagiri, and Kaligiri taluks.§ Varying as those who paid, or those who collected had the best of it, and fixed with reference to the several conditions that have been shown as necessarily affecting “net produce,” the taluk has been covered with a net work of rates that have for years impeded progress, and high prices alone have broke through successfully. There is a proportion to be observed in the averages, when drawn up with reference to the old taluks that shows, as might be expected, an intimate acquaintance with the soils, and to which reference may be made with advantage; but it is only when thus extracted that this information becomes available. The rates themselves are a maze; they number ninety-five; and I annex the details of a fiscal cobweb that few got clear of before prices rose without being the worse for the contact:—

Present rates in the Taluk of Atmakuru on lands that are not irrigated.

PER GORRU.											
RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
13	0	0	6	2	0	4	3	0	2	14	10
11	5	0	6	0	10	4	2	0	2	14	0
11	2	0	5	15	0	4	1	6	2	13	0
9	12	0	5	14	0	4	1	0	2	12	0
9	9	0	5	11	0	4	0	0	2	11	0
9	2	0	5	10	6	3	15	0	2	10	0
8	9	0	5	10	0	3	14	0	2	9	0
8	8	0	5	8	0	3	13	0	2	8	6
8	2	0	5	7	0	3	12	0	2	8	0
8	0	0	5	5	0	3	11	10	2	7	0
7	9	0	5	4	6	3	11	4	2	6	0
7	8	0	5	2	0	3	11	0	2	2	0
7	5	0	5	1	0	3	9	0	2	1	0
7	4	0	5	0	0	3	8	3	2	0	0
6	15	0	4	15	0	3	8	0	1	14	0
6	13	0	4	14	0	3	6	0	1	12	0
6	11	0	4	13	0	3	5	2	1	11	0
6	10	0	4	12	0	3	5	0	1	10	0
6	9	0	4	11	0	3	4	0	1	6	0
6	8	0	4	10	0	3	3	0	1	1	0
6	7	0	4	9	0	3	2	0	1	0	7
6	6	0	4	8	0	3	1	0	0	15	6
6	5	0	4	7	0	3	0	0	0	9	4
6	3	0	4	4	0	2	15	0	Total number of rates 95.		

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* Report to Board on Stalakarnam's Russums, dated 9th June 1865, No. 110, recorded in Board's Proceedings, dated 20th October 1865, No. 6,675.

† Report to Board on the Russums, No. 118, dated 5th June 1865.

‡ Report to Board on Bala Ravas Russums, dated 6th April 1866, No. 92.

§ Statement at the end of paragraph 55.

THE EFFECT OF A RISE IN PRICES.—41. When I wrote to the Board in 1863,* calling into question the present system of assessing the land, as annually cropped with the standard grain, I did not anticipate that true grain values would involve a heavy reduction of the existing assessment; and perhaps the results of this inquiry were equally far from what the Board anticipated, when, in their Proceedings of the 13th July 1865,† they expressed their opinion, that probably no objection would be raised by Government, were an allowance made for pasture as well as fallows, and its necessity shown. The true state of the case, however, involves no such reduction of grain values either to meet fallows or pasture. On the contrary, I have to submit, for consideration, how far grain values may be raised with due regard to fallows and pasture; and, considering that on more than half the land under consideration,‡ a net grain value averages from 4 to 5 Annas, and the present rate is 15 Annas, the question to be disposed of becomes one of no small moment. It might be argued, and the Board took this view,§ that a reduction of the Land Tax would affect the price of agricultural produce, and, with glutted markets, the Ryots would find it as difficult to pay for what has grown no grain as before the reduction. To recommend that a reduction should be made on the opposite hypothesis is to argue that the Ryots would put the land to a proper use, and risk revenue on what, under ordinary circumstances, is only a surmise. And instead of theory, before submitting the rates I would propose, I will submit such information as I have been able to collect, as to what has been the result in Atmakuru and the District generally of a rise in the price of grain, which is, to a certain extent, the same thing as a reduction of the Land Tax, and therefore an indication, to a certain extent, of what would be the probable effect of the latter contingency. Such figures remove the question from theory to fact, and may be considered more satisfactory than abstract principles, when the question involved is the relinquishment of revenue. From the time I joined the District, seven years ago, I have enforced the sound rule that the Ryots shall pay for what they hold; that they shall not be enabled by remissions to hold more than they can pay for, serfs of those who decide what *they must pay*; and a rigid adherence to this rule, when I adjusted the revenue in 1859-60, is probably in part the cause of the relinquishment in 1860-61, as shown in the margin, being one-eighth, and in 1861-62, a sixth of the area in occupation. Since then, it will be observed, the per centage relinquished has been smaller; there has probably been less fallowing at the public expense; and prices having averaged 44 Rupees in the six years under consideration, one inference to be drawn from the figures is that the high prices diminish the extent annually relinquished, whatever is done with the area retained. Repeating the prices and placing in juxta position the increase in the area in occupation, and such details as I possess on the use the area in occupation has been put to, will throw some light on this part of the subject; and, considering that grain has been selling on the average at 43 per cent. above the proposed commutation rate, and thus the Ryots have had every inducement to bring the whole area under grain, it may be perhaps considered that to have quintupled the area under fallows and pasture in five years, when the area under grain has only doubled, is some proof that the Ryots would follow a sound system of agriculture if they had the means, and though the difference of climate might prevent the adoption, to its full extent, of the skilful system of rotation pursued in Ongole; and this view of the case is supported by the results of the last five years under the same pressure of prices in the next taluk, where, exclusive of the rice, in 1864-65, for every acre under grain there was an acre and a third fallow and pasture.

Years.	Per centage of relinquishment.	Price of Jonna per Ton.
	Per cent.	RS.
1860-61	12	40
1861-62	17	38
1862-63	4	43
1863-64	4	48
1864-65	3	49
1865-66	6*	44
	Average	44

* This increase from 3 to 6 per cent. is probably due to the previous bad season.

Years.	Area under grain pulses, &c.	Fallow, pasture, &c	Total area in occupation.	Price of Jonna per Ton.
	Acres.	Acres	Acres.	RS.
1860-61	38,935	1,545	40,480	40
1861-62	48,560	1,604	50,164	38
1862-63	54,604	3,981	58,585	42
1863-64	65,337	4,212	69,549	48
1864-65	78,398	6,136	84,534	49
Increase in 5 years.	39,463	4,591	44,054	13*
Per cent	101	297	109	43

* Increase in the average of the five years above proposed commutation rate.

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* 6th July, No. 212.

† Paragraph 7.

‡ 69,000 Acres.

§ Board's Proceedings, 5th August 1863, No. 4,681.

*Nellore

Years.	Cultivation	Fallow and pasture	Proportion.
	Acres.	Acres.	Per cent
1860 61...	9,552	13,663	58
1864-65...	16,931	21,959	56

Probable effect of a reduction of the Land Tax.—42. It will be observed that the area under fallow and pasture has been affected, to a certain extent, in Nellore* by the high price o grain; and fallows and pasture are, of course, only a small portion of the actual increase in the area in Atmakuru. But, in the latter case, the Ryots are starting from the rudiments of agriculture as described by the late Mr. Embley; and, on the whole, the Board will perhaps be disposed to consider, with reference to the effect of a rise in prices, that there is some evidence in the events of the last five years that would justify the hope that a reduction in the Land Tax would not lead only to glutted markets, but would have a wholesome effect on our agricultural system.

Proposed rates for the arable area.—43. It has been seen that, in introducing the revised assessment, it is not a question of the extent to which deductions must be made from the actual grain values to meet the requirements of a sound system of agriculture, but to what extent grain values can be raised, and yet leave the Ryot the option, if so disposed, of following such a system; and, on this latter point, I have shown what has been the effect of a rise in prices equal to a reduction in the Land Tax of 43 per cent., to which must be added an actual reduction of 8,000 Rupees on well cultivation previously taxed, and many other reductions of late years, all of which have tended to increase the spread of present occupation, and will be neutralized, should prices fall to the commutation rates. It has also been shown that, though there is an improvement under present rates, the system of agriculture is rude in the extreme; and, it will be seen subsequently, there are upwards of 70,000 acres available for further occupation at the ordinary rates of assessment. The question to be solved, therefore, though difficult, is thus brought within narrow limits, and must be viewed, it seems to me, chiefly with reference to the area still available for occupation. There is no doubt that the means available for the employment and support of labor, when not engaged with the standard crop, greatly affect the value and occupation of land, and must also be taken into consideration. But when prices are 43 per cent. in excess of the commutation rate, if 70,000 acres are still unoccupied, it is clear that the present Land Tax is too high, though our calculations, as to net produce, are qualitative, and the Ryot does not pay the revenue by the sale of his grain alone, but also of his garden stuffs and rice, or by the sale of his stock, as the Irishman pays his rent with the pig. And after carefully considering the question in all its bearings, and, as I said before, the extent of land now unoccupied, and the effect that would be produced by a fall in present prices, which must, to a certain extent, be anticipated, I beg to adhere, as closely as I can, to the grain values, and propose, for the 4-bushels land, a rate in excess of 8 and 12 Annas according as the land can stand cropping, which is, I regret to state, a rise in round numbers of 50 per cent., for the 6-bushels land 1 Rupee, the moiety of the net grain value, and for the 10, 14, and 20-bushels land Rupees 2, 3, and 4, rates similarly favorable, and such as shall secure, as far as possible, the better land being the last to be thrown out of employment. I might make some more distinctions, looking at the tolerably clear superiority of some of the soils in certain classes, and the better results obtained in certain villages on the Pennair; but when a few carts load of dung or sweepings as in the field, Mr. Pennington measured at Tadiparti, can treble the yield, and good land be reduced to 3 bushels as at Karatampad and Dubagunta, I doubt whether such a course is politic; and I am unwilling to submit, for the approval of the Board and the sanction of Government, as permanent values, rates that a couple of years can falsify. If a Ryot treats these better lands fairly, he will certainly make more on them than I show, and so far the incidence of assessment must be uneven. But if a pressure should come in the wrong direction, they will be the last lands given up, the labor of the community will not be diverted from [illegible] less profitable lands, and the loss sustained in not recognizing these distinc- [illegible] the more to the [illegible] on the right side, that may, I hope will, have the Board's support tions will be a gain, an [illegible] and the approval of Government.

Irrigation from Public Sources.—44. We have 127 tanks, 14 river channels, 202 taxed wells, and a total irrigable area in round numbers under these sources according to the classification of 22,000 acres. Taking our revenue accounts we had in 1865-66 in occupation, and taxed under wells, a total area of 17,554 acres as shown below; and, as regards the valuable crops grown with the aid of these public sources, I trust to be able to give such information as shall enable the Board and Government to decide on the irrigation assessment to be imposed. But, as I requested that the attention of the Special Department should be chiefly directed to what concerned the 300,000 acres not irrigated, Mr. Rundall has not been able to go into details of cultivation according to soils, or calculate the net produce; and the information on these points is, therefore, more of a general nature than that submitted for crops grown without the aid of irrigation.

	Area.	Assessment.
	Acres.	RS.
Tanks...	13,740	59,848
River channels...	2,674	13,881
Tanks and channels combined...	994	4,527
Wells...	146	603
Total ...	17,554	78,859

Experiments in Rice cultivation.—45. As in the case of the lands that are not irrigated, we have two years' experiments to guide us in forming an estimate as to the average yield on rice lands, on which the crops were measured in 1864-65 by the Tahsildar of the Taluk, Kanchi Balaji Row, B. A., and his subordinates, and in 1865-66, partly by the permanent and partly by the special establishment. I annex an Abstract of the result of these experiments. It will be observed that on 4-bushels land, the yield, with the aid of irrigation, averaged on 79 experiments seven-fold; that on 6-bushels land there was, according to 98 experiments, a further increase on the rice yield of the lower class of 4 bushels; on 10 bushels, on 58 experiments, the average yield remained nearly stationary, the result being 33 bushels; on 14 bushels by a small number of experiments the average yield was three-fold; and on 20 bushels, 1 experiment gives pretty nearly the same yield with as without irrigation.

Estimated grain value.	Experiments made, and average ascertained yield of the rice land under irrigation.								Averages of the two seasons combined.	
	1864-65		1865-66.							
	Permanent Revenue Establishment		Permanent Revenue Establishment.		Special Establishment.		Average.			
	Experiments.	Yield.	Experiments.	Yield.	Experiments.	Yield.	Experiments	Yield.	Experiments.	Yield.
	No.	Bushels.	No.	Bushels.	No.	Bushels	No.	Bushels	No.	Bushels
20 Bushels	1	21	..	..	..	..	..	..	1	21
14 Do.	5	56½	..	..	2	42½	2	42½	7	49
10 Do.	36	37	6	24	16	36	22	30	58	33
6 Do.	49	34	5	25½	44	38	49	31¾	98	32¾
4 Do.	34	28½	1	25½	44	30	45	27¼	79	28
	125	35½	12	25	106	36½	118		243	33

The average yield of rice.—46. Remembering the extent to which rice cultivation depends on the land being properly manured, it is, of course, obvious that the averages are merely averages; and under every average there must be every variety of yield; in fact as wide a variety as the circumstances vary of those who cultivate the land; but that the averages as averages are tolerably correct, I see no reason to doubt. It is impossible to recognize the variations of capital; and from what I have heard on the subject, 33 bushels of uncleaned rice, as shown in the preceding statement, or 16½ tums of paddy to revert to the local nomenclature and measure, is, I dare say, about the present general average in Atmakuru, which is 13 cwt. to the acre*.

		lbs. Avoirdupois.
* 1 Putti of cleaned rice... ...	=	2,800
1 Do. of rice in the husk ..	=	1,765
1 Tum or $\frac{1}{20}$ do.	=	88¼
16½ tums	=	1,456 = 13 cwt.

COMMUTATION RATE FOR RICE.—47. In the statement of prices two descriptions of rice are specified, viz., "white" and "black," the former consisting of Peshanam, Sannavari, &c., kinds of rice that are sown early and reaped in January, the latter of what can be sown later, can do with less water, and is reaped in January, February, or March. But for both these crops, Mr. Rundall would have only one rate,† and observing that this was the course previously pursued when the rate was fixed at 20 Rupees, he suggests that Rupees 23-12-0 be taken as the revised rate.‡

Appendix No. V.

Appendix No IV.

† Paragraph 13.

‡ Paragraph 15.

RELATIVE PRICES OF JONNA AND RICE, AND THE COMMUTATION RATE PROPOSED FOR THE LATTER.—48. In fixing the commutation rate for rice, it is, of course, necessary to take uncleaned rice, as questions connected with labor affect calculations based on the cleaned article; and the price of uncleaned rice or paddy having risen as it has, notwithstanding a corresponding rise in the price of labor, is a feature of our markets to which Mr. Rundall also draws attention.§ Both grains being nearly equal as regards nutritive powers,‖ and a Puti of uncleaned rice only equal to half a Puti of cleaned rice, it follows, to say nothing of the cost of cleaning, that there are the means now in our markets of purchasing a larger quantity of food at more than double the price it formerly fetched. Again, if we consider the vast increase¶ that has been made of late years in the area provided with irrigation, and the fact that there is this rise in the price of the more expensive food, notwithstanding the increased quantity produced, it follows, as a further inference, that these improved means can scarcely be the result of an increase in the number of those who used to consume rice, *i. e.*, of the higher classes; but must, in all probability, be due in part to the improved means of the body of the people, who thus are enabled to become consumers of the more expensive food. This, however, is a question I do not propose to take up now; it is only necessary that I should refer to it as an additional support, and, in this instance, direct to what I have advanced in respect to foreign markets, and the consideration they should receive in fixing a commutation rate; and with reference to this and the other reason already given as affecting prices, in concurring with Mr. Rundall that one rate should be adopted for every description of rice, I beg to recommend that instead of Rupees 23 Annas 12, this rate be fixed at Rupees 25, or Rupees 107 per Madras Garce, which is, it will be seen,* the average of the 65 years.

Paragraph 20.

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§ Appendix No. IV.
Paragraph 11.

‖ Paira Jonna is probably much the same as Indian corn or Mokka Jonna (Maize) of which 100 lbs. = 60 lbs. starch, 10 lbs. albumen, and 5lbs of fat; whilst 100 lbs. rice = 75 lbs. of starch, 7 lbs. albumen, and ¾ lb. fat.

¶ Appendix No. X.

Atmakuru Taluk, 68 Villages.

Rice cultivated.	Acres.
1861-02	6,747
1865-66	10,951
Increase...	4,204
or 62 per cent	

District, 451 Villages.

Rice cultivated.	Acres.
1861-02	51,466
1865-66	92,827
Increase...	41,361
or 80 per cent.	

Subsequent changes prevent the areas being compared for all the villages.

* Appendix No. V.

Appendix No. IX, Enclosure headed Appendix O.

Soils.	Grain value assigned.	No. of experiments and average yield under rice.		Value of the average yield at the commutation rate of Rs. 23-12 per acre.		Cost of cultivation per acre.		Net produce.	
	Bushel	No.	Bushel	RS.	A.	RS.	A.	RS.	A.
Nalla Regada	20	1	21	12	7	6	6	6	1
Tuvva Banka Regada... .. Vandali Regada	14	7	49	29	1	6	6	22	11
Nalla Regada ... ... Talla Regada... ... ... Tuvva Banka Regada... .. Vandali Regada ... ... Vandali Banka Nela	10	51	33	19	9	6	6	13	3
Banka Regada ... ... Tuvva Banka Nela ... ... Chavati Tuvva Banka Nela...	10	5	33	19	9	5	10	13	15
Yerra Isuka Banka Nela ...	10	2	33	19	9	5	4	14	5
Vandali Banka Nela ... ... Tuvva Banka Regada... ... Banka Regada .. .. Tella Regada...	6	25	33	19	9	6	6	13	3
Tuvva Banka Nela ... ... Chavati Isuka Banka Nela.. Isuka Banka Nela ... ... Chavati Tuvva Banka Nela.. Chavati Banka Nela... ...	6	60	33	19	9	5	10	13	15
Tuvva Regada ... ... Yerra Isuka Bank Nela ...	6	13	33	19	9	5	4	14	5
Gulakarati Yerra Nela ...	4	1	28	16	10	6	6	10	4
Banka Regada ... ... Gulaka Regada ... ... Tuvva Banka Nela ... ... Tuvva Regada ... ... Chavati Tuvva Banka Nela. Chavati Isuka Banka Nela.. Chavati Banka Nela ... ... Isuka Banka Nela	4	35	28	16	10	5	10	11	0
Yerra Isuka Banka Nela ... Tuvva Yerra Nela ... ... Yerra Nela ... ... Gulakarati Yerra Garuvu ..	4	43	28	16	10	5	4	11	6
General Average...	...	243	33	19	9	5	12	13	9

COST OF CULTIVATING RICE AND NET PRODUCE.—49. Although Mr. Rundall, from the course I have pursued, has not been able to give for rice all the details he has been able to furnish as regards the cost of cultivation without the aid of irrigation, he has arrived at certain general conclusions. He considers the cost to vary with reference to the soils, and exclusive of feeding, from 5 Rupees to 5 Rupees 13 Annas; and doubting not that these calculations are as near the mark as we can go, but subject to variation as in the case of Jonna to the extent to which labor can be economized,† I propose, as regards rice, to take these rates as representing with sufficient accuracy the cost of cultivating rice at the commutation prices recommended by Mr. Rundall, and so calculate the net produce. One commutation rate being taken for every description of rice, there is no necessity, as regards irrigation to consider the different kinds grown. In like manner, no deduction need be made for fallow or pasture, as an irrigation assessment is only charged when the crop has been grown; and leaving contingencies of seasons in respect to their effect on crops to be dealt with hereafter under the head of remissions, all that has to be done to obtain the net produce, where irrigation is concerned, is to deduct the cost of cultivation from the gross produce; and thus calculated, and including the straw as an asset, the net produce, it will be observed, would vary for the 4, 6, and 10 bushels classes from Rupees 11 to Rupees 14, whilst for 20 bushels, 1 experiment gave a net produce of 6 Rupees, and in 14 bushels, 7 experiments gave 22 Rupees. But these are variations I need not, for reasons given, refer to, and taking the results of the other 235 experiments, when compared with the calculated costs, I will submit the assessment I could propose.

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† Paragraph 29.

PROPOSED WATER-RATE.— 50. We have not so close a net work of irrigation rates as I have shown where there is no irrigation, but there are 70; and it gives me much pleasure to be able to state that the whole 70 may be swept away, and a single rate introduced that shall secure clearness, where all now is uncertain, and shall further allow of the land assessment being kept distinct as enjoined by the Secretary of State in his Despatch of the 25th May 1866, Revenue, No. 21. It has been seen that our experiments show* a variation that the rates proposed for cultivation, without the aid of irrigation, would sufficiently meet; and when the value of the average net produce at the commutation rates, as shown in the last paragraph, only varies from Rupees 11 to Rupees 14, or 3 Rupees, it is clear that there is nothing in the costs of cultivation that would render a uniform rate for the water supplied injudicious. And recommending the same rate that the Government have sanctioned in the neighbouring taluk of Nellore be fixed for Atmakuru, viz., 4 Rupees, I beg to give in the margin the grain values assigned, the moiety of the net produce, the average combined assessment at present, and the ssessment that would have to be paid as proposed. Setting aside the two higher classes and their exceptional results, it will be seen† that the water-rate, combined with the arable rates, is 6 Rupees on the 10-bushels land, 5 Rupees on the 6-bushels land, and 4 Rupees 12 Annas and 4 Rupees 8 Annas on the 4-bushels land against Rupees 6-14-0, value of a moiety of the net produce on the 10 and 6-bushels land, and Rupees 5-7-0 on the 4 bushels; and I think, from these statements, it will be sufficiently clear, that the water-rate, added to the arable rates, fairly represents what the Government can, with propriety, claim; and, at the same time, if we estimate labor at its true cost, leaves a margin at commutative rates for short crops. What this margin must be when uncleaned rice is selling not at 25 Rupees, but at 40 Rupees, the puti, is a pleasing calculation.

Soils.	Grain value assigned.	Moiety of the net produce.		Average assessment at present.		Total amount to be paid as proposed.					
						Proposed rates on arable area.		Proposed water-rate.		Total.	
	Bushel	RS	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.
Nalla Regada...	20	3	0	5	5	4	0	4	0	8	0
Tuvva Banka Regada	14	11	5	7	8	3	0			7	0
Vandali Regada				5	9						
Nalla Regada	10	6	9	5	6	2	0			6	0
Tella Regada...				5	5						
Tuvva Banka Regada				4	12						
Vandali Regada				5	6						
Vandali Banka Nela				5	12						
Banka Regada				5	6						
Tuvva Banka Nela	10	6	15	5	12	2	0			6	0
Chavati Tuvva Banka Nela.											
Yerra Isuka Banka Nela ..	10	7	2	5	12	2	0			6	0
Vandali Banka Nela	6	6	0	4	7	1	0			5	0
Tuvva Banka Regada				3	14						
Banka Regada				4	6						
Tella do.				3	6						
Tuvva Banka Nela	6	6	15	4	7	1	0			5	0
Chavati Isuka Banka Nela.				4	7						
Isuka Banka Nela				4	7						
Chavati Tuvva Banka Nela.				4	7						
Chavati Banka Nela				4	7						
Tuvva Regada				4	3						
Yerra Isuka Banka Nela ...	6	7	2	4	7	1	0			5	0
Gulakarati Yerra Nela... ...											
Gulaka Regada	4	5	8	4	3	0	12			4	12
Tuvva Banka Nela				3	13						
Tuvva Regada				3	13						
Chavati Tuvva Banka Nela.				3	13						
Chavati Isuka Banka Nela				3	13						
Chavati Banka Nela				3	13						
Isuka Banka Nela				3	13						
Tuvva Yerra Nela	4	5	11	3	13	0	12			4	12
Yerra Isuka Banka Nela ..	4	5	11	3	13	0	8			4	8
Yerra Nela											
Gulakarati Yerra Garuvu ..											
Banka Regada	4	5	2	2	11	0	8			4	8

† Grain value.	Combined assessment.		Value of moiety of net produce under irrigation.	
Bushel.	Rs.	A.	Rs.	A
10	6	0	6	14
6	5	0	6	14
4	4	12	5	7
4	4	8		

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* Paragraph 45.

REMISSIONS.—51. In the 12th paragraph of the Order of Government, as regards this settlement, it is intimated that no deductions are to be made for the unprofitable portions of fields, as these would be measured by the survey; and in the rules promulgated by the Board,* in respect to remissions, it is ordered that a remission may be given for a partial loss of irrigated crops in Districts in which the assessment has not been revised, this provision, it has just been seen, being made when they are settled in fixing the assessment. As regards, however, other remissions, the rules referred to would affect the system of assessment just proposed for irrigation; and as the said rules do not contemplate such a system, or refer to the question of when the crops were planted, a point which affects the claim of those who seek assistance, I would, with reference to the principles on which the Land Revenue has been revised, generally, as well as with reference to irrigation, request the Board's permission to introduce, with the revised rates, the Ryotwar Rules called for by the Board, and submitted by me on the 12th July last year. These rules, which include remissions, the Board will observe provide for the water-rate being a distinct charge. As regards general questions, they avoid, as much as possible, interference with the Ryots; whilst I trust taking due care of the public interests. As regards this latter point, measures are taken to prevent the faults of individuals being rectified at the public expense, or irrigable area under public sources of supply made the means of subsistence to a favored few. And subject to such modifications as the Board may deem advisable,† the Ryotwar Rules I wish to introduce, will, I believe, meet the wants of the District, provide for all ordinary questions arising with reference to the tenure of land at the ordinary rates of assessment, and supply the place of that composite production of the Brahmin, the Mussalman, and the Mahratta, known under the name of a "Hookumnamah;" the vernacular designation of that net work, in this instance of rules, with which the good old Tahsildars, many of them most excellent men, went forth, in the language of the east when the early ploughing showers fell, "to explain" to the Ryots how much land they should cultivate, and take agreements‡ that the next hotweather formed the basis of the "Jummahbundy," and the absolute power of those who manipulated the accounts.

PROPOSED APPLICATION OF THE WELL RULES.—52. We have in Atmakuru, I am glad to report, 1,191 wells free of special taxation, and irrigating more or less 6,346 acres. The effect of this cultivation in cheapening the cost of producing other crops I have referred to. The effect of these wells in meeting a bad season has been so often acknowledged, that further reference to the advantages thus obtained would be out of place. In respect to their influence on the stock yard, it is otherwise; this is a point that is only now coming into view, consequent on the rise in the price of stock; and although the use of prickly-pear as a succulent and wholesome food for cattle in the hotweather, may ultimately be the means of supporting cattle more cheaply than at present, too much stress, I think, can scarcely be laid on what affords the ready, though somewhat costly, means of meeting a great want. With wells much may be done for the stock; and viewing wells, either as regards their general effect in cheapening food-grains, and meeting famines, or giving the Ryots the means of keeping their stock at home, and sparing the natural wood, it seems to me the application of the Well Rules to Atmakuru may, with advantage to the State as well as the Ryot, be based on the assumption that no reservation is necessary as regards rivers, and well cultivation should be everywhere free of special taxation, unless the wells be within the prescribed distance of some public sources of supply. At present the banks of the Pennair are for miles as arid as the Great Sahara. Should the proposition I do myself the honor to submit be approved, we should have, in the course of a few years in all probability, a belt of cultivation that would affect most favorably the general spread of occupation, and provision made for the cattle that might, with propriety, be encouraged at *the public expense*. As it is, it will probably be found to do little harm. When there is a fair supply in the Pennair, what water is lifted can have little effect on the channels, and when the water is low the channels are of no use, and the wells would lift what now oozes down through the sandy bed to the sea. The total number of taxed wells is 202. How many of these wells are liable, with reference to sources of supply constructed at the public expense, I have not the ready means of stating; but, presuming they formed only a small portion, with a total revenue last year of 603 Rupees, the sacrifice of revenue involved is as small as the loss to be anticipated to our river channels; and, in recommending that I be permitted to apply the rules as proposed, I beg to state that, with reference to the nature of the streams, I am treating the Boggeru and Eiraperu as local drainages.

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* Proceedings, 1st November 1865, No. 7,009.

† Our modification will be the change under the new well Rules as regards distance, and the permission now given to sink a private well within a dozen yards of a public channel or other source of supply constructed at the public expense.

‡ Borrowing a term from western phraseology, I have called the Ryots serfs under this system *Bondsmen* would be more correct.

ACCOUNTS,—53. In introducing the survey areas whilst the Jummahbundy of 1865-66 was going on, I adopted forms that did not require many columns, and were a simple recital of each subject as it was taken up. Thus the Land Register gives only the details of the land, the name of the field, its soil, grain value, survey area, and assessment if held at the ordinary rates, and number and area in the previous accounts. This Register gives no details as to tenure, or whether the land is irrigable, or occupied for public purposes, &c. In like manner, the Register of Inams gives simply Inams. The Inams are all gathered together, the survey numbers identify them with the Land Register; there is no opening left for an entry in the wrong columns; and collected in one statement, the Inams which are shown and compared, as they stood in our old accounts, have been revised by the Inam Commission, recorded by the survey. The irrigable area being entered and identified in the same way, the Register of Irrigation from public sources gives the total area under each source, leaving the details of tenure to be ascertained either from what appears under the head of assessment, or by a reference to the Annual Registers. And the irrigation from private sources and the Register of land reserved for public purposes complete a full and accurate description of a village that a large body of men, collected for the occasion, could draw up and revise, with comparatively little fear of an error being left undetected. I do myself the honor to send the accounts of a village,* for the Board's inspection, and request the favor of being allowed to retain this system of accounts till the assessment of the whole District has been revised, and final orders passed, when the accounts can be tabulated in such manner as may be deemed advisable.

VILLAGE ESTABLISHMENTS, REVENUE, MAGISTERIAL, AND POLICE.—54. The village system in this District has still much strength. Our headmen are a body of respectable well-to-do Ryots. Those who have the immediate charge of the accounts are rising in education and fitness for their duties; and it is very desirable that such arrangements shall be made as shall keep pace with the times, and, if possible, preserve the present standard. One obvious course is to place legal emoluments on as liberal a scale as the resources of the State will allow. A second is the observance of orders often issued by the Board, and capable of being strictly enforced when the accounts have been revised. I allude to the necessity of limiting the time the village authorities are kept in attendance on Courts and Cutcherries. A third question, I would submit, for consideration is, whether the headman should not be relieved of police duties. The headman is the Village Magistrate; and the distinction observed in the higher grades of the Magistracy might, it seems to me, be carried to its legitimate conclusion with advantage. At present, the headman and Village Magistrate is part of the village watch as well. He is bound to report to the police, as in former days he reported to the head of police. He is virtually under the beat Constable whilst entrusted with the powers of a Magistrate, an anomaly that requires revision on other than personal grounds; and leaving the real village watchman, Vetti, Toti, or by whatever other name known, to do watchman's work, the man who writes the village accounts or Kurnum might, with propriety, be made the police writer of the village to secure police administration, and the headman relieved of duties that, as now exacted, tell against the efficacy of the village system. The completion of what occurs to me, as required at present on this point, is to be found in the mode pursued in joining together small villages, or surveying small villages with larger.† It does often happen that a small village has capital village authorities, to whose hereditary rule the people pay ready obedience. It, on the other hand, often happens that in these very small villages, there either are no men of substance, or those there are will not look after the village, as the pay is necessarily small, and the labor of the office by no means in proportion. Like the cultivation expenses a headman's labor does not diminish with his emoluments; there are travellers to be attended to, beat Constables received daily, &c., and in all such cases, the collective emoluments meet the difficulty. Where not desired, of course, no change would be made, save to proportion the receipts to the proposed scale if approved; and adding, on this subject, that the proposed emoluments are based wholly on the land, to save the Ryots the difficulty of changing grain into money, for further particulars, I beg to refer to a statement‡ which will be given subsequently, and gives the requisite details for every village, whether in land or fees, the provision I propose to make, and the additional call thus made on the State, the total cost being Rupees 23,902, which includes the village watch constituted as I would recommend, and provided with reference to the proposed number of revenue servants.

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* Appendix No XI.

† Appendix No. XII.

‡ Appendix No. XIII.

INAMS.—55. The area set apart for the remunerations of the village service is found by the survey to be 10,610 acres, of which 2,024 are rice, as shown below :—

Service.	Area.			
	Dry.	Rice.	Garden.	Total.
	Acres.	Acres.	Acres.	Acres.
REVENUE AND MAGISTERIAL.				
Headman and village Magistrate...	1,530	217	...	1,747
Kurnum or Accountant	1,562	451	20	2,033
Shroff or Cashier...	186	71	...	257
REVENUE SERVANTS.				
General duties.				
Vettiyan...	526	123	...	649
Mahatad	252	27	...	279
Bandilas	67	39	...	106
Special duties.				
Nirkatti or waterman	32	88	...	120
Nelamadu do.	26	15	...	41
	4,181	1,031	20	5,232
POLICE.				
Kattubadi	1,183	58	...	1,511
Taliari	46	35	...	81
Kavaligadu	44	9	...	53
	1,573	102	...	1,675
Doubtful Urtawar...	46	19	...	65
VILLAGE COMMUNITY.				
Village Purohits	450	186	...	636
Carpenter	771	220	...	991
Blacksmith	68	29	...	97
Potmaker	267	84	...	351
Washerman	395	133	...	528
Barber	241	70	...	311
Chuckler...	568	147	6	721
Sangidivadu or Ferrymen	...	2	...	2
Chembadi do.	...	1	...	1
	2,760	872	6	3,638
Total...	8,560	2,024	26	10,610

N. B There is a discrepancy in this Statement of 200 acres, which is under inquiry, and the item under the head of Urtawar is shown as doubtful, pending the orders on the fees though not specially referred to

In addition to this provision there are fees to which I will refer subsequently; and, confining my attention at present to the land thus held in lieu of money-payments, I beg to repeat what I have already stated,* that as regards such Inams and any more land that may be so given hereafter, a change is necessary in the existing rules, if we would make such provision thoroughly effective. If Service Inams continue to be treated as other alienations, they are unmanageable. If the Collector be authorized at the request of the office-holder, or on dismissing him to cancel the alienation, the public service and the interests of the alienee would be provided for. In my letter of the 23rd of May last on this subject, I have brought to the Board's notice how the measure I propose would give a value to the emoluments, that a mere deduction in a Ryot's puttah would fail to convey; and should the Board, on a re-consideration, feel disposed to recommend the measure, and it be sanctioned, then in that case, as regards service Inams, in addition to the accounts referred to in paragraph 53, I would have a separate Register. The lands entered in this Register would have all the permanency, the sanctity in a Hindu's eyes of an Inam; and, at the same time, remain private property in the fullest sense of the word. The Headman's or Kurnum's Inam would no longer be an eye-sore, but property that might be improved by the outlay of private capital. Property that would be saleable on application to the Collector should the office-holder wish to realize, and property that the office-holder need not regard as a gulf, in which so much money has been irrevocably sunk, gone from him and his heirs for ever, should the appointment be lost. In my letter to the Board I have only urged the change as regards service in the Revenue, Magisterial, and Police Departments; as regards the other service Inams for the mere exclusive benefit of the village community, the same change could be made, if thought proper. It would free 10,000 acres in this taluk alone; and as regards the other Inam land shown in this Register, as held for subsistence and otherwise, all I need here state can be briefly given. The total area is found by the survey to be 18,127 acres, as shown in the margin, against 11,773 acres, as shown in our accounts of 1859-60. Including some Service Inams held by "Kattubadies," the operations of the Inam Commissioner have embraced a total area of 19,216 acres; and the annexed Statement shows these alienations and their number, as they stood in the revenue accounts of 1859-60, the number and areas as recognized by the Inam Commissioner, the previous quit-rent, the additional quit-rent imposed by the Commissioner, and the total quit-rent and the total area as ascertained by the Survey.

	Survey	Accounts of 1859-60.
	Acres.	Acres.
Dry	14,567	9,044
Rice	3,539	2,591
Garden	21	148
Total...	18,127	11 773

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*30th October 1865, No. 262.

	Service.					Subsistence and otherwise.					Total.		Brought within the operations of the Inam Commission, and quit-rent imposed.					
	Number.	Area.				Number.	Area.				Area.	Quit-rent.	Number.	Area.				Quit-rent.
		Dry.	Rice.	Garden.	Total.		Dry.	Rice.	Garden.	Total.				Dry.	Rice.	Garden.	Total.	
		ACS.	ACS.	ACS.	ACS.		ACS.	ACS.	ACS.	ACS.	ACS.	RS.		ACS.	ACS.	ACS	ACS.	RS.
Revenue accounts of 1859-60.	1,154	5,974	1,470	30	7,474	1,676	9,044	2,581	148	11,773	10,247	...	1,680	9,383	2,542	145	12,070	...
*Inam Commission...	...	...	...	...	...	...	...	...	...	...	...	...	1,930	11,851	2,574	140	14,565	...
Survey ...	...	8,560	2,024	26	10,610	...	14,567	3,539	21	18,127	...	...	1,913	15,709	3,488	19	19,216	...

* Of the area and quit-rent shown under this head, 874 acres and 309 Rupees are Kattubadi Village Service Inams, which have been dealt with by the Inam Commission, and Rupees 413 are "not agreed to."

The excess shown by the survey over the area granted will be dealt with according to the Board's Standing Circular, No. LX., and the revenue derivable from these sources will be duly considered in calculating the probable result of the proposed rates. The rate of conversion I propose to take will be 17 per cent.† in excess of the customary local rate, the result arrived at by comparing the occupied area last year

†	Acres.
Accounts of 1859-60	96,774
Survey	1,13,017
Increase ...	16,243
Per-centage ...	17

less relinquishment as shown in our accounts with the survey. Should, however, the Board think it necessary to go into further detail, with reference to the old Taluks, the rates would be as follows :—

Villages.	Area in occupation in 1864-65, less relinquishments for 1865-66.		Excess.	Per-centage.
	Revenue accounts.	Survey.		
	Acres.	Acres.	Acres.	
Sangam...	22,624	26,156	3,532	15
Revuru...	45,047	52,029	6,982	15
Kaligiri	3,411	4,202	791	23
Udayagiri	25,692	30,630	4,938	19
	96,774	1,13,017	16,243	17
With reference to the Pennair.				
Sangam—North	6,823	7,694	871	13
Do. —South	15,801	18,462	2,661	17
Revuru—North	26,122	31,252	4,830	19
Do. —South	18,625	20,777	2,152	12

FEES —56. As I propose to provide for the payment of the village service in the Revenue, Magisterial, and Police Departments by the assignment of land, no deduction need be made for the fees in kind or otherwise that the Ryots may, of their own free will and accord, think fit to pay after the revised rates have been introduced; and I show in the separate Statement already referred to, the further relief thus given, or in other words, the additional assets devoted to secure a sound system of agriculture and eventual increase of the Land Revenue on a surer basis than at present. In this Statement* the fees have been distributed with reference to the service, the payment made for watch and ward in certain villages by the Urtawar Poligar being left unappropriated, till the Board's Orders are received on my letter of the 6th December last, No. 311. Should the Urtawar fees be finally referred to the Inam Commissioner for disposal, they will, I presume, not be available for Police purposes; should the arrangements I have proposed† be confirmed, they will, on the other hand, increase the set off against the provision made for the village watch. And to place the whole question of cost in a clear and distinct shape with the fees, I have given the Inams in land and have contrasted the present and proposed emoluments for each Department. It will be seen that the cost of the proposed establishment is as follows :—

	RS.
Revenue and Magisterial	17,506
Police	6,396
Total...	23,902
And the available assets, exclusive of Urtawar fees, are ...	16,677
Deficit...	7,225

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* Appendix No. XIII.

† Letter to Board, 6th June 1865, No 118.

PUBLIC PURPOSES.—57. As I have previously stated in reference to remissions, no deductions are to be made by this Department for unprofitable portions of fields; these will be measured by the survey; and it is only, therefore, the probable increase in the area required for public purposes that I need consider in calculating the area likely to be available for future occupation and consequent increase in the revenue. As regards, however, the excluded head, and the provision made for its recognition, it is requisite that I should state here that, so far as I am aware, no steps have been taken as yet to that end by the survey in this District; and, in my opinion, I would respectfully add, none are necessary, as we are not going to impose an assessment such as we impose on rice, according to the area actually cultivated; with the rates proposed unprofitable portions will, I trust, disappear in time; and believing that a disregard of such details is as much to the advantage of the Ryots as of revenue, in respect to the special subject of this paragraph, I think, in several items, that further deductions need not be anticipated under the head of Public Purposes. The sites of villages, for instance, are not what we need enlarge hereafter. There is no necessity for giving the non-agricultural classes building ground free of cost. It is on the contrary one step, though a small one, towards making those classes contribute their share to the public revenues; and as regards the agricultural classes, such provision is, in reality, objectionable; they should have every inducement to live out on their land; now it is no longer necessary to herd together for safety of life and property; and, in like manner, with the changes time must bring, other changes will come in respect to what is held in common at present. Increase under these, heads need not be anticipated; but under public purposes there are further deductions that must be anticipated. In the area included in the survey fields there is land that is required for drainage, roads, irrigation channels, that must hereafter be reserved, and will go to swell the area shown in this Register. A further item of increase will be wood lands. To the effect of wood on the country generally, it is unnecessary that I should refer. To the effect of a readily obtained supply of firewood in checking the use of manure as fuel,* it is impossible to give too much importance in an agricultural point of view. The ashes are but a poor substitute for the manure that should go on the land without first passing through the fire; it may be of purification but not of strength. And the Government, in their Order of the 15th May last, having stated their readiness to take into consideration any recommendations from the Conservator of Forests and Collectors for the reservation of jungle, wood is one item that I would add to public purposes, and for the present, under this head, I propose to transfer 55,000† acres, leaving this area to be adjusted hereafter in communication with the Conservator of Forests, and with reference to the isolated hills referred to in paragraph 7. Including this item, the area under the head of public purposes to be deducted from the total arable area, as classified, is 83,000 acres.

WOODS, ROADS, AND IRRIGATION WORKS.—58. For the conservancy of the woods on which so much depends for the District roads, the state of which is so much additional cost on our produce, and for the repair and improvement, so far as local means go, of our Public Works of irrigation, I have drawn up a detailed Statement, and would employ a Taluk Surveyor, as proposed in my letter to the Board of the 30th October 1865, No. 263. For such an office, the undivided attention of a superior man would be required. Roads, woods, and tanks, with their supply and distributing channels, would give him work one way or another in every village he visited. And giving to this Officer such a per-centage from the three funds as would ensure the services of one fitted for the post, and who would gain a thorough knowledge of Revenue matters and might look, in future, to rise to the post of Tahsildar, for the pay of this officer and for the conservancy of the woods and forests, the making and repairing of our District roads, and the execution of repairs and improvements, I refer to last, but by no means place last in the list of what is necessary, I show in the Statement the means available. For the woods, it will be observed, we have the sale of the Striharikota jungles at present, the sale of grass hereafter; for the road we have the 3 per cent. Road Tax under Act III. of 1866, and for our irrigation works the proposed 25 per cent. is not what could press heavily on the

* A Report will be shortly made to the Board on this subject.

† Appendix No. XIV.

Ryots. As stated in my report on this subject, the extra burden thus imposed is not the collection of so much money to be spent anywhere, but the levy; it may be entirely in kind of so much labor for the effective repair and improvement under ordinary circumstances of works of irrigation on which those taxed depend for their crops, and, in most cases, have the only labor available; and that limited to their own tank, &c., and only leviable for necessary and ordinary repairs or improvements, that this tax would be distasteful to the people is as unlikely as that it would be a burden. The people beg to have back again the old system of fining those who do not contribute their share of the customary labor. Why they beg, it is only necessary to consider what human nature is, and look at the tanks to understand; and the system now proposed meets this difficulty without having recourse to measures not contemplated by the Penal Code, and much on the same principles as have been adopted in the English Highways Acts.

PROBABLE RESULTS OF THE REVISED RATES PROPOSED.—59. The importance of irrigation, as a necessary element in the economy of labor, has been referred to; and when it is remembered that a Jonna crop gives work for only 5 months in the year, it is obviously not to be desired that the production of such crops, without a corresponding change in the irrigable area, should be greatly increased were it possible, and the additional labor thus brought into existence locked up a *dead loss* to the community for the other 7 months of the year. But bring irrigation into play, and all is changed. There is work for every month, for every day, if the irrigation works are kept in fair repair, and a decent supply of wood prevents the rain running off as fast as it falls, and what is retained being burnt out with nearly the same rapidity. It is perhaps often overlooked this question of economy of labor; and we are apt to think that a reduction of rates is all that is required when agriculture is slack. But if the matter be fairly considered, it will, I think, be admitted that the principle involved is vital, and a sound increase in Atmakuru in the area actually under occupation can, beyond a certain point, only take place, as irrigation from public and private sources is improved and increased. I give in the margin the proportions of last year in Atmakuru in this respect. These proportions correspond pretty nearly with the results obtained on a more limited area;* and supposing that we do, with the aid of the proposed repairs and improvement cess, bring the public sources up to irrigating the full area shown as irrigable, and there is that increase in the number of private wells, &c., that the removal of all unnecessary restriction may lead us to expect; that our revised rates, subject to such changes as may have been, or may be hereafter made on further revision, enable the Ryots to fallow at their own expense, and have a bit of pasture into the bargain; and that instead of adhering to subsistence allotments we make over the land, when so applied for, in divisions, with reference to the general classification, then preserving the proportions required for the economy of labor, and allowing for the excess area to be brought under occupation, though not kept annually under grain, I think we may calculate, in a few years and with fair prices, on an increase of Rupees 65,000 as shown in Appendix No. XV. But all the calculations as to probable increase would be at once upset, were the Someshwaram anicut and southern high level channel constructed. Rising to the water-shed within 12 miles of the ghauts and crossing the head of the supply channels of all our tanks south of the river,† every drop of water that this canal brought down would be utilized, and the 240,000 cubic yards per hour it is calculated to discharge would have an effect on the occupation of land that would be again doubled, were a high level channel to the north of the river to complete a magnificent sheet of rice cultivation, and secure th[illegible]ry land being occupied, as in the Nellore taluk, under the Nellore anicut.

Accounts of 1864-65.

Without irrigation, 84,607 acres.

With irrigation—	
Rice...	14,460 acres.
Garden	4,334 "
Total ..	18,794

or one-fourth of the dry.

ASSISTANCE RECEIVED.—60. It now only remains for me to express my regret at the length to which this report has extended, and request permission respectfully to bring to the notice of

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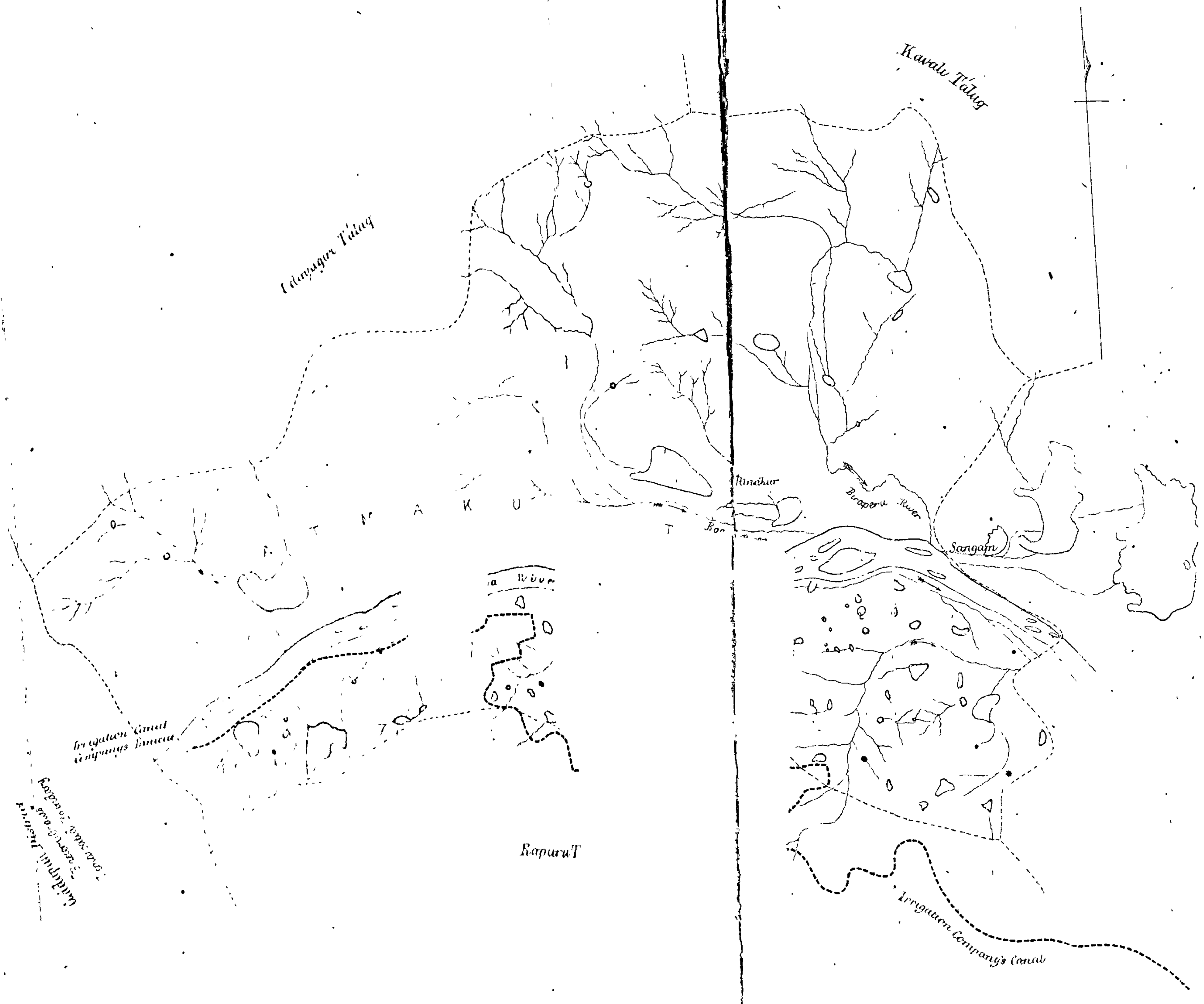
* Paragraph 25. One-fifth of the dry.

† Appendix No. 1.

Appendix D. I.



Udayagiri Táluq
Kavali Táluq
A T M A K U R T
Rinatur
Biraperu River
Sangam
a River
Nellore Táluq
Irrigation Canal Company's Limits
Rapuru T
Irrigation Company's Canal

W. B. Dykes
Collector

the Board and Government the great and cordial assistance I have received in collecting the information submitted, and carrying out the duties the Government have been pleased to entrust to me. From the commencement of our work, Mr. Rundall has maintained the character he has already won as a zealous and energetic Officer. He has got together a most creditable body of men, and has been well assisted by Maddirala Venkaji Pantulu, the Supervisor, in seeing to the due classification of the land, and the correct entry of details, on which so much depends. To Mr. Rundall's unwearied attention, and the manner he has been supported by the Special Department, in all grades, is due such success as has attended our efforts to classify the land correctly. The help I have received from my other Assistants, a perusal of this report goes far towards placing clearly on record. Without the information Mr. Pennington and Mr. Clogstoun have collected, as regards agricultural statistics, the variations in grain values would have completely prevented my forming any satisfactory conclusions on the experiments made, or submitting results that, I trust, may be deemed an advance in that knowledge of the resources we have to tax, that is so requisite, whether we regard public or private interests. And standing out from the mass of experiments, those made by these Officers south of the river, and Mr. Martin and Mr. Rundall to the north, have a value, and are assistance that can be readily recognized; and I need not further refer to in detail.

Appendix No. 2.

Survey Areas furnished by F. C. Puckle, Esq., Deputy Superintendent of Revenue Survey Nellore.

Appendix No. 3.

Extracts from Form 13, Memorandum No. 21, Settlements Departments.

NELLORE, 22nd June 1866.

No. $\frac{125}{78}$

From C. RUNDALL, Esq.,
Special Assistant Collector,

To J. W. B. DYKES, Esq.,
Collector of Nellore.

SIR,

I have the honor to submit to you, herewith, the statement showing the average prices at which the different grains and crops, ordinarily cultivated in the Atmakuru taluk, have been sold according to the monthly price lists sent in from the taluks, and lodged in the Huzur records. Altogether, it embraces a series of 65 Fuslies, including that which terminates with the present month; or from 1801-02 to the present revenue year 1865-66.

2. For the most part, the price lists for all, save a few months of some years, have been duly found amongst the records; and the average price has, of course, been calculated on the number of months for which details were procurable. In respect to some of the less important crops, the entries having been omitted in the several monthly price lists, no average price for a few years can consequently be shown.

3. The crops that I have selected are those ordinarily cultivated on the dry and wet land of the taluk, numbering, respectively, seven and two as marginally given, or nine different grains in the aggregate, white and black paddy being rendered as separate crops.

Dry.	Wet.
1. Paira Jonna.	1. White paddy.
2. Aruga.	2. Black paddy.
3. Lamp oil.	
4. Horse gram.	
5. Ragi.	
6. Sajja.	
7. Pesalu.	

4. I am of opinion, however, for the reasons that I assign in my report on the relative grain values of the several description of soils, that besides Paira Jonna, which we have all along, in our settlement operations of Atmakuru, taken as the standard grain for dry soils, no need exists for considering the commutation price of any other grain save Aruga. To these two crops, therefore, I have given consideration.

5. In the general statement, under the head of each crop, the average selling price of each year is first given; then the average selling price during the ryots' selling months of the several crops; and lastly, the average selling price in favorable ordinary seasons, omitting all years of famine, excessive drought, and the like. White paddy being harvested in January and February, and black paddy in February, March, and early part of April, March and April have been taken as the selling months of the former, and April and May of the latter. Paira Jonna being all harvested by the end of March, April and May have been taken as the selling months; and similarly the Aruga crop being, for the most part, reaped during January, February and March have been taken as the selling months.

6. The several Fuslies thus omitted as seasons of famine or excessive drought are detailed marginally, and number eight altogether. Remarks in detail respecting these years are separately attached to the statement for easy reference. All Pies in the statement have been adjusted, and the entries of portions of a Rupee given in Annas only; but they have, however, been included in the calculation of the general averages.

Fuslies	Years.
1216	1806-07
1217	1807-08
1222	1812-13
1223	1813-14
1233	1823-24
1234	1824-25
1242	1832-33
1243	1833-34

7. The subjoined statement shows the prices that have ruled on the average through all seasons, and through such as may be deemed as the favorable or ordinary years of the series; likewise, during the selling months of the whole series of years, and of the favorable or ordinary years:—

	Average price of all seasons.				Average price of only favorable seasons.			
	For each year.		For the ryots' selling months of each year.		For each year.		For the ryots' selling months of each year.	
	RS.	A.	RS.	A.	RS.	A.	RS.	A.
White paddy...	26	15	27	2	25	9	25	8
Black paddy...	22	14	23	0	21	8	21	4
Paira Jonna..	30	15	30	10	28	13	28	3
Aruga......	15	7	14	13	14	7	13	11

8. At the foot of the accompanying statement, averages under each head, for every ten and for the last five years, are exhibited; and the little relative variation that there is between the average prices of the Paira Jonna and Aruga crops, is most noticeable. Likewise, the slight difference that exists between the yearly averages, and the averages for the ryots' selling months of the year. In both descriptions of Paddy, the latter average is the higher of the two, by some 3 Annas or so. It occurs to me, that a more accurate result would be arrived at by working up the averages according to the calendar year, and not according to the Fusly. A bad season always affects two Fuslies, and upsets the averages; whilst, it may be observed, that a bad season does not, to the same extent, affect two calendar years. I have pursued the course that has, I

believe, been usually adopted in the settlement of all districts. It might be worth while to consider this matter for the future. But this part of the Nellore District differs in so much, that no dry crop is harvested till after the beginning of the calendar year.

9. During the favorable or ordinary years in number 57, it will be seen that, as regards the standard crop, Paira Jonna, the lowest average is Rupees 15-8-0; and that the averages run as marginally specified. The ten Fuslies, in which the average price fell below Rupees 20, are further noted in detail. Thus five years are above Rupees 19, one year above Rupees 18, two years above Rupees 17, and two years more than Rupees 15. These latter prices prevailed in 1842 and 1843, or in the years when the state of trade and agriculture were generally so very much depressed.

	Years.
Less than Rupees 20	10
Rupees 20 and less than Rupees 25 ...	14
Rupees 25 and less than Rupees 30 ...	11
Rupees 30 and less than Rupees 35 ...	7
Rupees 35 and less than Rupees 40 ...	7
Over Rupees 40 ...	8
Total...	57

	RS.	A.
1241 ...	19	3
1245 ...	19	9
1251 ...	19	13
1252 ...	15	8
1253 ...	15	11
1254 ...	19	0
1259 ...	19	12
1260 ...	18	14
1261 ...	17	11
1262 ...	17	11

10. The last year of famine was 1833, some thirty-three years ago; and looking at the average prices that have prevailed during the past twenty years, and the general rise in all prices that has occurred during this period, it may safely be deemed highly improbable that prices can, on the average, ever revert to the very low figure to which they fell in certain of the former years. The average price for the past twenty years is given below; and being all pretty ordinary or favorable years, it seems to me that the average price of the several grains might, on sound grounds, and with perfect justice, be commuted at Rupees 25 per Puti for Paddy, both the white and black descriptions, at Rupees 30 per Puti for Paira Jonna, and Rupees 15 per Puti for Aruga, provided that ample allowance is made for vicissitudes of seasons and similar contingencies.

	Average of prices from Fusly 1256 to 1275.			
	Of the year.		Of the ryots' selling months.	
	RS.	A.	RS.	A.
White paddy...	30	12	31	6
Black paddy...	26	5	27	2
Paira Jonna...	33	5	34	1
Aruga...	17	2	14	10

11. The commutation price heretofore taken, as regards dry crops or Paira Jonna, by Mr. Travers in the villages he settled, I observe to be seven Madras Pagodas, or Rupees 28 per Puti; and by Mr. Smally in his subsequent settlement of other villages Rupees 30. The commutation rate for both descriptions of Paddy being Rupees 20. As regards the dry grains, these rates were no doubt too highly fixed, when viewed as regards the ordinary prices prevailing on the average in those years. I do not see, however, that Mr. Smally's rate is inapplicable now. It is to be remarked that the relative difference in the average price of wet and dry grains has considerably lessened since the former commutation rates were fixed. The per-centage that Paira Jonna, on

the average, exceeded the price of white Paddy is shown below, for each series of ten years or so:—

Fuslies.	Per-centage of excess of Paira Jonna in price over white Paddy.
1211 to 1220	28·
1221 to 1230	19·
1231 to 1240	17·
1241 to 1250	1·9
1251 to 1260	12·17
1261 to 1270	10·69
1271 to 1275	—20
Average...	12·57

12. In deciding the commutation rate for Paddy, it seems desirable that one rate only should be fixed for all descriptions; and that this is best done by taking as near the mean as possible for the average commutation price. Throughout the whole taluk, a greater portion of the white description of Paddy is sown than of the black; but the proportion cannot be so much as three-fifths to two-fifths. This course is similar to that which seems previously to have been adopted in fixing the commutation rate in this district for wet grain, and pursued also in the recent settlement of other districts.

Proceedings of the Board of Revenue, No. 2,810, dated the 12th May 1864, paragraph 23.

13. From the Board's remarks on the Settlement Report submitted for the Kurnool District, it seems that they are averse to the inclusion in the series of years on which the commutation price is fixed, the high prices prevailing in recent years; and are of opinion that by so doing, and by basing the commutation rate in one district on the averages of all years, inclusive of such as may have been seasons of famine and drought, whilst in the calculations for other districts previously settled, such exceptional years have been omitted; one of the chief objects of the revision of the assessment is disregarded.

14. It is easy to see the force of the remark as to the years that should be taken into account in calculating the ordinary average price for commuting the different grains, and that one uniform system in this respect should be adopted for each district taken up for the revision of its settlement, but not so in regard to the inclusion in the calculation of the prices prevailing in more recent years. Had these favorable prices in every case to be omitted, and the calculations to be based solely on the same series of years for all districts, it seems to me that very probably there would be good cause to adjust the commutation rates of the first settled districts by the time that the revision of the settlement of the last district could be carried out; so many years of progressive increase in prices generally would probably intervene.

15. Basing, therefore, my recommendations on the average prices that have prevailed throughout the ryots' selling months of the whole series of favorable ordinary years, I would propose that, as the mean of the average prices of white and black paddy is Rupees 23-6-0, Rupees 23-12-0 be taken as the commutation rate; and that similarly, as Rupees 28-3-0 and Rupees 13-11-0 are the average prices for Paira Jonna and Aruga, Rupees 27-8-0 and Rupees 13-12-0 be respectively fixed on as the prices for commuting the same. These rates according to the Madras Garce are marginally noted.

Grains.	Rate for Madras Garce of 4,800 Nellore Measures.	
	RS	A.
Paddy	101	13
Paira Jonna	117	14
Aruga	58	15

16. It seems to me, however, that one rate of commutation should be decided for the whole of the principal division of the district, as no obstacle to such a course is at present apparent to me. Of course, I cannot now say what may hereafter be found to render this course impracticable; at present two only of the taluks have been taken up for classification, and four remain to be commenced. It would, at all events, be well before finally proposing any commutation rate, to know how far the averages arrived at for Atmakuru may assimilate with the averages similarly calculated for the whole of the taluks of the principal division of the district. Different rates of commutation may probably be required for Ongole and the taluks of the Sub-division; but this might likewise with advantage be seen to now.

17. Connected as the subject so closely is with prices, it is necessary that I should here notice the subject of markets. From my own and other inquiries, I have been unable to learn of any regular grain market within the limits of the Atmakuru taluk. The most usual and general course now is for the ryots to sell their grain to dealers who come from parts of Cuddapah and the western districts, and purchase it in their villages. I have in parts been told, that several years ago grain used at times to be taken by the ryots to such places as Venkatagiri Kalastri, and Nellore, and disposed of. They apparently never do so now. And as there are no real grain markets in the taluk, and consequently the ryots do not incur any cost on this account, I am of opinion that there is no need for making any allowance for the conveyance of the ryots' produce to the market. I am not, however, prepared to say that the price list monthly rendered from the taluk is that usually prevailing throughout the same; or whether it is ordinarily calculated from the prevailing retail prices of the Kasba station, I consider that very probably it may be the latter.

18. It only remains for me to add that considering the classification as based on the Tum, it has appeared to me to be more preferable to fix an even sum as the commutation rate of each Tum, and so avoid broken sums in respect thereto, than to rate the Puti at an even sum, and so introduce fractional parts into the rate applicable to the measure that we always go by in assessment calculations.

(True Copy.)

(Signed) J. W. B. DYKES,
Collector

APPENDIX V.

STATEMENT showing the average prices at which the different crops ordinarily cultivated in the Atmakuru Taluk have been sold according to the monthly Price Lists recorded in the Collector's Office.

	1	2												3			4						5					
	YEARS.	GRAINS.												SEEDS.			PULSES.						IRRIGATION.					
		PAIRA JONNA.			ARUGA.			SAZZA.			RAGI.			LAMP OIL.			HORSE GRAM.			GREEN GRAM.			WHITE RICE IN THE HUSK.			BLACK RICE IN THE HUSK.		
		Average.			Average.			Average.			Average.			Average.			Average.			Average.			Average.			Average.		
		Of each year.	Of the Ryots' selling months, April and May.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, February and March.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, October and November.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, April and May.	Of the favorable ordinary years only.
	A. D.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
	1801-02 ...	40	35	40	21	24	21	32	30	32	33	33	33	44	40	44	41	38	41	61	58	61	31	30	31	27	25	27
	1802-03 ..	35	32	35	20	20	20	27	26	27	31	...	31	41	...	41	31	32	31	50	48	50	27	28	27	23	20	23
	1803-04 .	35	32	35	16	17	16	26	28	26	31	30	31	42	40	42	30	30	30	38	38	38	26	24	26	23	22	23
	1804-05 ...	38	49	38	16	...	16	...	...	...	37	40	37	41	42	41	35	40	35	44	48	44	28	30	28	24	24	24
	1805-06 .	33	26	33	15	12	15	27	26	27	31	26	31	37	34	37	33	25	33	44	32	44	26	23	26	22	19	22
(I.)	1806-07 ...	46	80	...	24	32	...	36	...	...	42	72	...	55	80	...	44	64	...	55	80	..	36	56	...	32	60	...
(II.)	1807-08 ...	50	32	...	..	...	...	37	40	...	46	34	...	48	38	...	49	34	...	53	40	...	28	32	...	34	23	...
	1808-09 ...	31	28	31	13	15	13	23	20	23	28	28	28	34	32	34	26	24	26	42	36	42	24	24	21	20	19	20
	1809-10 ...	26	24	26	12	11	12	21	21	21	26	26	26	30	27	30	23	22	23	32	27	32	21	21	21	17	16	17
	1810-11 ...	24	25	24	12	12	12	21	20	21	24	24	24	34	33	34	23	24	23	34	32	34	20	21	20	16	17	16
	1811-12 ...	32	37	32	14	16	14	27	20	27	30	36	30	40	52	40	29	32	29	48	56	48	24	28	24	20	23	20
(III.)	1812-13 ..	43	52	..	20	22	...	34	28	...	40	44	...	52	48	...	44	44	...	65	64	...	32	38	...	28	36	...
(IV.)	1813-14 ...	45	49	...	24	24	...	39	40	...	41	36	...	48	32	...	62	42	..	74	48	...	37	32	...	33	28	...
(V.)	1814-15 ...	38	30	38	22	16	22	30	32	30	34	27	34	33	28	33	35	28	35	60	40	60	33	30	33	29	24	29
	1815-16 ...	27	24	27	13	12	13	25	24	25	25	24	25	29	36	29	22	24	22	46	42	46	25	23	25	20	16	20
	1816-17 ...	22	21	22	11	12	11	20	20	20	21	22	21	34	32	34	20	20	20	26	32	36	20	20	20	16	16	16
	1817-18 ...	21	25	21	10	11	10	17	16	17	19	21	19	56	60	56	29	23	20	52	58	52	20	20	20	16	17	16
	1818-19 ...	26	28	26	11	11	11	19	20	19	23	24	23	47	58	47	27	24	27	51	40	51	20	20	20	16	16	16
	1819-20 ...	27	26	27	11	12	11	20	20	20	23	22	23	37	34	37	24	24	24	59	50	59	20	20	20	16	16	16
	1820-21 ...	24	24	24	12	12	12	20	20	20	22	22	22	43	40	43	26	20	26	54	40	54	21	20	21	16	17	16
	1821-22 ..	28	28	28	13	12	13	21	20	21	24	24	24	50	46	50	25	28	25	50	44	50	23	24	23	19	20	19
	1822-23 ...	31	32	31	16	16	16	24	24	24	31	32	31	51	59	51	31	32	21	55	54	55	26	24	26	21	20	21
(VI.)	1823-24 ...	41	48	...	20	24	...	32	24	...	40	48	...	48	44	...	37	40	.	66	80	...	32	40	...	28	56	...
(VII.)	1824-25 ...	69	52	...	22	...	..	51	60	..	59	56	...	60	64	...	57	52	...	93	64	..	44	44	...	40	38	...
	1825-26 ..	34	27	34	16	16	16	24	21	24	30	29	30	58	42	58	34	30	34	54	40	54	24	24	24	20	20	20
	1826-27 ..	22	20	22	11	11	11	19	20	19	18	18	18	38	36	38	24	24	24	42	40	42	22	20	22	18	16	18
	1827-28 ...	23	20	23	11	10	11	16	16	16	19	19	19	31	27	31	22	20	22	36	32	36	19	18	19	15	14	15
	1828-29 ..	20	20	20	10	10	10	16	16	16	17	16	17	29	36	29	20	20	20	36	40	36	19	20	19	15	16	15
	1829-30 ...	21	24	21	10	10	10	18	16	18	18	20	18	36	32	36	25	24	25	38	36	38	20	19	20	16	16	16
	1830-31 ...	23	24	23	10	10	10	20	20	20	18	20	18	30	28	30	24	24	24	39	40	39	21	20	21	17	16	17
	1831-32 ...	19	18	19	8	8	8	17	18	17	16	15	16	23	22	23	22	20	22	36	32	36	19	19	19	15	14	15
(VIII.)	1832-33 ...	33	46	...	19	24	...	29	20	..	32	40	...	55	50	...	34	48	...	62	80	...	31	38	...	27	36	...
(IX.)	1833-34 ...	49	32	...	28	20	...	41	40	...	49	38	...	53	40	...	70	60	...	92	60	...	39	32	...	35	26	...
	1834-35 ...	27	20	27	17	15	17	25	32	25	28	20	28	36	24	36	49	40	49	55	40	55	26	20	26	22	18	22
	1835-36 ..	19	18	19	11	8	11	17	16	17	18	18	18	26	...	26	30	20	30	51	46	51	20	20	20	16	17	16
	1836-37 ..	23	24	23	12	13	12	20	23	20	22	24	22	27	29	27	26	28	26	44	43	44	24	28	24	21	23	21
	1837-38 ...	23	22	23	12	13	12	21	19	21	24	24	24	34	43	34	30	40	30	41	49	41	23	22	23	19	17	19
	1838-39 ..	21	24	24	13	14	13	21	20	21	24	24	21	49	50	49	38	40	38	44	41	44	24	24	24	20	20	20
	1839-40 ...	24	24	24	14	14	14	20	20	20	24	21	24	45	40	45	28	28	28	51	48	54	22	22	22	18	17	18
	1840-41 ...	22	21	22	13	12	13	20	20	20	22	22	22	36	32	36	30	28	50	53	44	53	20	20	20	16	16	16
	1841-42 ...	19	19	19	12	12	12	20	20	20	20	20	20	33	36	33	28	28	28	41	32	41	19	20	19	15	15	15
(X.)	1842-43 ...	15	14	15	10	10	10	16	16	16	15	15	15	32	28	32	26	25	26	31	27	31	15	15	15	14	12	14
	1843-44 ...	15	16	15	10	10	10	16	16	16	15	16	15	27	26	27	21	22	21	27	28	27	11	15	14	12	13	12
	1844-45 ..	19	20	19	10	10	10	17	16	17	17	19	17	28	28	28	22	22	22	39	40	39	18	19	18	16	16	16
	1845-46 ...	28	32	28	14	18	14	25	18	25	25	30	25	32	36	32	28	32	28	51	60	51	24	28	24	20	24	20
	1846-47 ...	29	28	29	15	15	15	23	24	23	25	24	25	36	36	36	32	42	32	50	47	50	22	22	22	19	16	19
	1847-48 ...	30	28	30	14	13	14	24	24	24	25	22	25	33	33	33	27	25	27	40	36	40	21	20	21	17	16	17
	1848-49 ..	25	20	25	11	10	11	21	23	21	20	19	20	29	27	29	23	22	23	34	33	34	21	21	21	17	15	17
	1849-50 ...	19	19	19	12	12	12	17	16	17	15	16	15	23	28	26	19	20	19	31	32	31	19	20	19	15	[illegible]	15
	1850-51 ..	18	18	18	11	11	11	15	15	15	15	16	15	30	32	30	20	20	20	32	32	32	18	18	18	15	16	15
	1851-52 ..	17	17	17	12	12	12	16	16	16	14	15	14	28	28	28	21	22	21	51	32	31	18	18	18	15	15	15
(XI.)	1852-53 ...	17	19	17	10	10	10	16	16	16	14	15	14	30	32	30	22	24	22	36	40	36	16	17	16	14	11	11
	1853-54 ...	28	32	28	12	15	12	25	25	25	25	30	25	43	48	43	31	36	31	53	56	53	23	28	23	21	26	21
	1854-55 ..	39	40	39	14	14	14	25	24	25	30	29	30	47	46	47	43	54	43	75	72	75	29	32	29	26	28	26
	1855-56 ...	37	40	37	17	20	17	30	24	30	32	36	32	38	38	38	47	54	47	66	68	66	33	34	33	27	29	27

STATEMENT *showing the average prices at which the different crops ordinarily cultivated in the Atmakuru Taluk, &c.—(Concluded.)*

1	2												3			4						5					
YEARS.	GRAINS.												SEEDS.			PULSES.						IRRIGATION.					
	PAIRA JONNA.			ARUGA.			SAZZA.			RAGI.			LAMP OIL.			HORSE GRAM.			GREEN GRAM.			WHITE RICE IN THE HUSK.			BLACK RICE IN THE HUSK.		
	Average.			Average.			Average.			Average.			Average.			Average.			Average.			Average.			Average.		
	Of each year.	Of the Ryots' selling months, April and May.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, February and March.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, October and November.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, March and April.	Of the favorable ordinary years only.	Of each year.	Of the Ryots' selling months, April and May.	Of the favorable ordinary years only.
(XII.) A. D.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
1856-57 ...	26	21	26	14	14	14	25	26	25	25	24	25	31	36	34	33	36	33	50	50	50	28	26	28	21	20	21
1857-58 ...	33	40	33	...	...	...	29	24	29	29	34	29	...	...	...	46	50	46	...	...	...	31	38	31	27	36	27
1858-59 ...	40	40	40	28	...	28	33	...	36	32	32	32	56	59	56	53	40	53	52	40	52	39	36	39	32	32	32
1859-60 ...	40	40	40	...	...	...	...	...	...	32	32	32	60	...	60	42	40	42	48	...	48	35	34	35	28	28	28
1860-61 ...	40	40	40	...	...	...	38	35	38	33	35	33	...	...	...	45	51	45	...	...	...	34	34	34	28	28	28
1861-62 ...	38	39	38	21	21	21	36	35	36	32	33	32	60	...	60	53	59	53	...	...	...	36	37	36	31	31	31
1862-63 ...	42	41	42	27	27	27	39	39	39	37	38	37	61	61	61	49	50	49	...	...	...	41	45	44	39	39	39
1863-64 ...	48	59	48	27	25	27	44	43	44	41	46	41	69	71	69	50	52	50	...	...	...	48	49	48	43	51	43
1864-65 ...	49	47	49	23	...	23	43	43	43	43	46	43	76	79	76	54	59	54	...	...	...	47	47	47	42	41	42
1865-66 ...	44	47	44	...	...	...	43	43	43	40	43	40	69	71	69	49	55	49	...	...	...	44	47	44	40	43	40
ABSTRACT. Average for each 10 years under the several heads.																											
A. D.																											
From 1801 to 10...	36	35	33	16	17	15	28	26	25	33	34	30	41	41	38	33	33	30	46	43	43	28	28	26	24	24	21
From 1811 to 20...	39	30	27	15	14	13	25	24	27	28	27	25	43	39	41	31	28	25	54	47	51	25	25	23	21	20	18
From 1821 to 30...	30	29	25	14	13	12	21	24	19	27	28	22	43	40	40	30	29	25	51	47	41	25	25	22	21	21	18
From 1831 to 1840	26	24	22	15	14	12	23	22	20	26	24	22	36	37	34	36	35	32	53	46	47	25	24	22	21	20	18
From 1841 to 1850	22	21	22	12	12	12	19	18	19	19	19	19	30	31	30	25	25	25	37	36	37	19	19	19	16	15	16
From 1851 to 1860	32	33	32	15	13	15	27	23	27	27	28	27	42	39	42	38	40	38	51	51	51	29	29	29	24	25	24
From 1861 to 1865	44	47	44	25	25	25	41	41	41	38	41	38	67	70	67	51	55	51	...	...	...	44	45	44	39	41	39
Average...	31	31	29	16	15	15	27	25	25	28	29	26	43	42	42	35	35	32	49	45	46	28	28	26	24	24	22
Average of all the Years.																											
From 1801 to 1865	30	30	28	15	14	14	25	24	24	28	28	25	41	40	40	34	33	31	49	45	45	26	27	25	22	23	21
Average of the Ryots' selling months during favorable or ordinary years only.	...	28	...	...	13	...	...	23	...	...	25	...	...	38	...	...	31	...	...	41	...	...	25	...	...	21	...

NELLORE,
27th June 1866.

(Signed) C. RUNDALL,
Special Assistant Collector.

NOTE.—Explanation of Numerals—See separately attached paper.

Extracts from a Report of the late R. M. EMBLY, Esq., Assistant Director Revenue Settlement Nellore, to C. RUNDALL, Esq., Assistant Director Revenue Settlement, Nellore, dated 29th June 1865, No. 102.

I have the honor to submit, herewith, a summary of the information I have gained during the progress of the general classification of the Atmakuru taluk. In this taluk far more attention is paid to the cultivation of dry crops, than in either of the two last taluks I have reported on. Jonna is the crop chiefly cultivated on it, and as the ryots of this taluk chiefly depend on this crop for furnishing food both for themselves and for their cattle, they bestow much care on its cultivation, manuring the land to the utmost of their power.

* * * *

The Tota cultivation in this taluk is of considerable extent, but the ryots do not bestow so much care upon it, nor bring it to such a state of perfection, as in the taluks where it is their main dependence. The same crops are cultivated, and where equal care has been bestowed in the manuring and cultivation, the yield is equally as good. I have seen some few new wells being dug, and I think that where the ryots clearly understand the new rules lately issued with regard to wells situated more than 50 yards from any Government source of supply, we may expect a large increase in the Tota cultivation of this taluk. Great attention is also paid to the wet cultivation in this taluk, and there are but very few villages where there is not more or less wet cultivation found.

* * * *

I give below an account of the system of dry farming pursued in this taluk; for the purpose of rendering it clear, I have entered under the months of the year the usual work done in each month by the ryots. From this statement will be seen the season at which each crop is sown, the length of the period it is on the ground, whether sown singly or mixed with others, and what crop, if any, that may not follow others in the succeeding cultivating season. The only second crop I have found sown and grown within the same year on the dry land of this taluk, is Ulavalu after Metta Sazza.

April.

Mullum Ragi and Kesari Vari cut and stacked. Towards the end of this month, or beginning of next, Mulum Ragi, Vaira Jonna, Pesara, Ulavalu, Kandi, Sannavari, Kesavari, and Eswarakorra are taken from the stacks and thrashed. The seeds of Amadalu are picked and crushed. Cotton also picked four times at intervals of about six days. In order to put Palapu Jonna, they plough twice; then to break the clods, drag the Guntaka over the land once; then flood the land; after it has dried, they scatter the seeds by the hand; then to mix the seeds with the earth, drag the Gorru twice; then to level the ground, drag the Guntaka over it once; then form the small beds by the Danta; after it has sprouted, they flood the land. Manekatam weeded by the hand; manure put on dry lands in small heaps.

May.

Totas and Magani manured by picquetting cows, sheep, &c., on them, and by bringing manure from the village and putting it in small heaps on them. To destroy the stalk of last year's dry crops, they drag the Guntaka twice over the land. If rain falls, they plough the land intended for Aruga, Amadalu, Korra, Metta Ragi, and Metta Sadja once or twice. They loosen the earth round the roots of the Palupu Jonna by digging it with the "Dokudupara," and it is kept watered. They plough the land intended for Mullum Sadja two or three times.

June.

They again once plough the land intended for Mullum Sadja, spread the manure. After rain has fallen, they again plough once the land intended for Aruga, Amadalu, Korra, Cotton, Metta Ragi, and Metta Sadja. At the end of this month, they flood the land intended for Karu Kesari, Potti Nullavari; then plough the land six times and manure the ground treading Tangadu and Vempali leaves into the ground; they then drag the Manu over the land once, and after having soaked the seeds for two days in water, they plant them out by the hand, and three days afterwards flood the land. Manekatam and Palapu Jonna are cut and thrashed.

July.

For Metta Sadja they plough the land once; then drag the Guntaka over the land once; then put the seeds by the Gorru; then again drag the Guntaka over the soil once. Or they scatter the seeds by the hand; then to mix them, they drag the Gorru and Guntaka each once over the land. They plough the land prepared for Mullum Sadja once, drag the Guntaka and Dindu each once, put the seeds by the Gorru; then drag the Guntaka once; then form the small beds; and after the plants have sprouted, flood them. If rain does not fall, they flood the land, and then put the seeds in the above manner; sometimes the seeds are put by the hand, and then beds are formed in the usual manner. At the end of this month, they flood the land intended for Sannavari; then plough it six times; manure it by treading Tangadu, Vempali, and Indigo leaves in, and after having soaked the seeds for two days in water, they plant them out by the hand, and three days afterwards flood the land. They weed the Karukesari and Potti Nallavari.

August.

Sannavari, "Pampi Dukki" sown in this month. To remove the weeds and loosen the earth round the roots of Metta Sadja, they drag the Papadam over the land once; this is done with the Dokudu Para for the Mullum Sadja. In case the stalks should not have sprouted well in any place, other stalks are brought and put there, watered every five or six days. Sannavari weeded. The land intended for Aruga, Amadalu, Korra, Cotton, Metta Ragi, is ploughed, and Aruga with Kandi is sown in two furrows; Cotton separately in a third; Korra is put in two furrows, Cotton in a third. If Cotton is put separately, it is sown with the Gorru. The Guntaka is now dragged once over the land. The land for Amadalu is ploughed, the seeds put by the hand in the furrows, and the furrows filled by ploughing between them. In the land intended for Metta Ragi, they scatter the seeds by the hand, drag the Gorru over the land twice, or plough it twice.

September.

Sometimes the dry crops mentioned last month are not put till this month. To remove the weeds and loosen the earth between the rows, they drag the Papadam once, for the same purpose they drag the Gorru once, and then the Guntaka twice between the rows of Amadalu. The land intended for Paira Jonna, Uluvalu, and Pesara, is ploughed twice, Potta Nullavari is cut. For Sannavari "Velli Dukki" they plough the land three or four times, scatter the seeds by the hand, and mix them by ploughing the soil once or twice.

October.

They cut Mullam Sadja; and then having manured the land, they plough it twice to prepare it for Mullam Ragi. Metta Sadja is cut. Land intended for Eswarakorra is flooded and manured. Sangadu and Vempali leaves are also trod in. The Manu is dragged over the land to level it and break up the clods; and after the grain has been soaked in water for two days, they plant it out by the hand, and three days afterward, flood the land. Karu Kesari is cut end of this month. Land intended for Paira Jonna with Ulavalu and Pesara, is ploughed once or twice. Mullam and Metta Sadja are thrashed.

November.

Land intended for Paira Jonna, &c., is ploughed once; the Jonna seed mixed with Ulavalu and Pesara are then put in with the Gorru; to level the land the Guntaka is then dragged over it once. When Ulavalu or Pesara is grown separately; they scatter the seeds by the hand in the land already prepared, and mix them with the earth by ploughing it twice. Ulavalu may be put by the Gorru. Sannavari and Eswarakorru are weeded. The land intended for Mullam Ragi is ploughed four times. The seeds are scattered by the hand; the land is then twice ploughed. The

" Dindu" and " Guntaka" are dragged over it each once ; and small beds are formed in the usual manner ; after it has sprouted, they flood the land, and keep it well watered every three or four days. Korra is cut.

December.

Sometimes Paira Jonna is not put till the beginning of this month. To remove the weeds and loosen the earth round the roots of the Paira Jonna, the " Papadam" is dragged over the land once. They dig round the roots of Mullam Ragi with the " Dokudu Paira." If the stalks have not grown well in any place, fresh sprouts are brought and put there. End of this month Metta Ragi cut.

January.

Aruga, Pesara, and "Kudappa" Sannavari are cut ; the land intended for Kodakesari is flooded and ploughed six times, manured, and leaves trod in, in the usual manner. The Manu is then dragged once over the land, and after the seeds have been soaked in water in the usual way, they are planted out by the hand.

February.

" Velegadda" Sannavari is cut. During this month, the buds are twice plucked. Kodakesari is weeded. Ulavalu and cotton are gathered, Aruga, Korra, Metta Ragi thrashed.

March.

Kandi and Cotton picked ; Mullam Ragi and Paira Jonna are reaped The seeds of the Amadalu are plucked twice.

Memorandum.

It is not customary to put Metta Sadja in the fields in which during the previous year Jonna, Cotton, or Kandi have been sown, as the stalks of those plants would not be decomposed and mixed with the earth in time.

XI. I have found no regular system of rotating crops in this taluk. In the better sort of regada soils, Paira Jonna is grown every year without change. Pesara and Indigo are generally sown with it ; in some few of the more westerly villages Jonna, &c , is sown for four successive years, and the fifth either Amadalu or Ulavalu is sown ; then again Jonna in the above rotation ; the fifth year the land is not manured ; but when Jonna, &c., is sown, the land in part is slightly manured every year. These lands are not relinquished. It takes from five to six years to manure the whole of a ryot's holding in these soils ; he brings manure from the village and picquets sheep and goats upon it. In the poorer class of regada soils, and the better class of red soils, Jonna is grown about two years out of every four ; the remaining two years either Ulavalu or Amadalu is sown, as these crops are exhaustive than Jonna. If a ryot has any holding in the regada soil, he does not manure his holding in these ; but if he has not, he does. These red soils are not given up ; but in cases where they are, Jonna is generally grown for three years, and Aruga or Amadalu the fourth ; the land is then relinquished for about the same number of years it has been cultivated ; and when again taken up, the rotation of the crops is as above-mentioned. In the inferior red soils, Ulavalu is generally grown the first year, then the second Jonna or Aruga according to the rain-fall or wants of the ryots ; the third year the one of the above crops, which was not sown the previous one ; the fourth year Amadalu is generally sown. This land is not manured ; they then relinquish the land for three or four years, and when they recommence to cultivate it, the rotation is generally as above Amadalu or Ulavalu or Indigo is frequently put to a small extent in the regada soils in rotation with Jonna, that is, if a ryot has one acre of land, he puts five-sixth under Jonna, one-sixth under Amadalu or the other crops, changing the place of them every year, so that once in every six years, Jonna is rotated with a less exhaustive crop. In some villages the ryots say, that in the four sorts of red soils which they relinquish when exhausted, that they keep certain portions of their holdings for a particular crop, such as Aruga, Cotton, Ulavalu, or

Amadalu, but not Jonna, sowing more or less of each crop according to their respective wants, and continue to sow the same crop in the same place until the soil is exhausted when they relinquish it for a time.

XII. The only crops either standard or auxiliary which I have found to be generally acknowledged as having a restorative effect, are Ulavalu, Pesara, and Janamu. Amadalu is by some villagers stated to have a restorative effect, but this is denied by others. Palapu, Yerra, and Tella Jonna is grown in several villages as green-food for cattle during the hot season. Where it is put simply as green-food for cattle, it is put as the third crop in the Totas. In some villages, where they also cultivate it for a crop, it is sown instead of Mullam Sadja. In the former villages, the soil is not manured for it, and the water in the wells is generally insufficient, so it does not come to much. In the latter villages, the soil is manured, and it is kept well watered.

XIII. About two-thirds of the villages of this taluk send their cattle to graze at the Nallamullas or Veligondlas. The usual time for sending them is the latter part of May, or beginning of June. They return from there the latter part of November, having been there six months. During the six months they are in the village, they are permitted to graze over the unpreserved waste of the village, and are fed on the tsraw of that year's crop. As they are accompanied by buffaloes, sheep, &c., the ryots say they are unable to tell the number a given area of unpreserved waste will graze for a given time. The preserved waste known as Amani Khancha or Pasuvula Bidu is generally kept for the ploughing bullocks; the number a given area, say 10 acres, will graze for the three months, December, January, February, during which there is grass, is variously stated by the different villagers from forty to eighty. I suppose we may therefore safely say that sixty may be grazed. In the remaining one-third villages, which do not send their cattle to the hills, they are permitted to graze over the unpreserved waste, and are fed on the straw of that year's crop. In one instance, Amani Chiruvella, they are sent to the adjoining village of Ponguru to graze for six months. The preserved waste is always kept for the ploughing bullocks.

XIV. I have not found that the ryots of this taluk keep any of their patta land waste for grazing their cattle. This I attribute to there being a fair amount of waste in most of the villages.

XV. In this taluk, Inams are sublet to ryots for cultivation under two conditions, namely, "Makta" or a fixed rent, and "Medi Palu" or a division of the produce. The terms of the "Medi Palu" vary slightly in the different villages; but I think that the most general are, the Inamdar pays quit-rent; expenses borne by both are village fees "Meralu" and thrashing. The cultivator defrays the expense of ploughing, putting seeds, weeding, and reaping. The yield is then equally divided.

XVI. There are two systems of cultivating the wet lands in this taluk, the one known as wet ploughing or "Rampi Dukki" or "Kudappa." The second known as dry ploughing or "Velli Dukki" or Valigadda. The first course is chiefly preserved in the villages irrigated from large tanks, as Kalavoy, Anantasagaram, Mimalur, &c.; and in the villages watered from river channels, as Veruru and Mahomedapuram, &c. The second course is chiefly pursued in villages possessed of smaller tanks, as Vasali, Atmakuru, Chiramana, &c.; but the land in these villages sown with Kesarivari or Eswarakorra must be cultivated under wet ploughing. Pedda Sannavari they generally cultivate under the dry ploughing.

XVII. The wet crops cultivated in this taluk are—

(I.) Sannavari sown end of September or beginning of October, cut end of February or beginning of March; six months on the ground.

(II.) Koda Kesarivari sown in January, cut end of April; four months on the ground.

(III.) Eswarakorra put in October, cut in March; six months on the ground.

(IV.) Putta Nallavari put in July, reaped end of September; two and a half to three months crop.

posed to be placed in the order in which most extensively cultivated, Paira Jonna he mentioned as occupying about three-fourths of the cultivated area. As a general standard crop for the taluk, Paira Jonna was, therefore, decided on.

4. From the statement which has been prepared of the area cultivated under the different crops throughout the taluk during Fusly 1275, an Abstract of which is subjoined, it will be observed that the area sown under Jonna comprises about 75 per cent. of the total cultivated area of the taluk; and that similarly the percentage of the area, as regards Aruga, is 11 per cent; Lamp-oil 5; and Horse-gram 2,————, minor crops, such as Sazza, Ragi, Pasara, Korra, Bengal-gram and Indigo, making up the remainder, and collectively comprising some 7 per cent. The statement showing the details in respect to actual cultivation, as extracted from the accounts of several villages for many different numbers, and thrown together as Appendix F. to this report, are abstracted here for reference in the margin, and show very similar results.

Crops.	Per-centage.
Paira Jonna	78·54
Aruga	8·27
Lamp-oil	5·32
Horse-gram	0·74
Minor crops	7·13
Total ...	100·

Particulars of cultivated area.		Total area in acres.	Per-centage.
Dry Crops.			
Jonna	52,313		
Jonna with Horse-gram or Pesara or Indigo mixed with it ...	5,559	57,902	75·70
Aruga...	3,330		
Aruga with Cotton	4,514		
Aruga with Lamp-oil	417	8,291	10·85
Lamp-oil		4,000	5·22
Horse-gram	1,024		
Horse-gram with Cotton and Lamp oil, &c.	262	1,286	1·68
Minor Crops.			
Ragi	1,945		
Sazza	1,123		
Other sundry crops	1,943	5,011	6·55
		76,490	100·
Wet Crops.			
Peshanam and Sannavari		4,304	34·64
Eswarakorra...	1,309		
Kesari	2,066	3,375	27·16
Ragi		796	6·42
Jonna in wet land		3,185	25·63
Minor Crops...		764	6·15
		12,424	100·

NOTE—This statement is deficient, as regards details, for 17 out of the 74 villages of the taluk; particulars regarding them not having yet come to hand.

(V.) Karu Kesari put in July, reaped end of October; four months' crop.

(VI.) Manekatam put end of February or beginning of March, cut middle of June; three and a half to four months' crop, when second crops of paddy are cultivated; they are generally either Karu Kesari or Manekatam.

* * * *

(XXI.) I have not found any system of rotating wet crops in this taluk. If rain does not fall in time in the villages where they have dry ploughed for Sannavari, they again plough it under the wet system and put Kesarivari; this is the only change I am acquainted with. Majani lands are partially manured every year both by manure brought from the village and by treading Tangadi and Vempali leaves into it; it takes from five to six years to manure an average holding. In the villages where the land is less in proportion, it is manured in less time.

(XXII.) The ryots of this taluk expend proportionally more of their capital in the improvement of their wet lands, than either totas or dry. They also expend, particularly in the western villages of the taluk, much capital and labor in the improvement and cultivation of their totas. I may instance Kaluvoy and Anantasagarum. In the centre and towards the east, less capital and care is expended in the totas, and more in the dry lands cultivated with Jonna.

* * *

(Signed) R. M. EMBLEY,
Assistant Director of Revenue Settlement.

(True Extracts.)

(Signed) J. W. B. DYKES,
Collector.

Appendix No. 7.

Extracts from the reports of Mr. J. B. Pennington, Mr. H. F. Clogstoun, and Mr. C. W. W. Martin, on experiments made in 1865-66, to ascertain the average yield of the early Jonna crop.

Appendix No. 8.

Extracts from diaries kept by Mr. J. B. Pennington, Mr. H. F. Clogstoun, and Mr. C. W. W. Martin in 1865-66.

NELLORE, 25th June 1866.

No. $\frac{138}{89}$

From C. RUNDALL, Esq.,
Special Assistant Collector of Nellore,
To J. W. B. DYKES, Esq.,
Collector of Nellore.

SIR,

1. I have the honor to furnish you with further information, relative to the proposal for the settlement of the Atmakuru taluk.

2. The first step that is necessary, is to consider the crops that we should base our calculations upon, and express the gross produce of the various soils as classified.

3. The dry crops generally grown throughout the taluk were, in the first instance, ascertained by the late Mr. Embley, and specified in his report on the general classification operations of Atmakuru to be:—I, Paira Jonna (with Pesara, Indigo or Ulavalu); II, Aruga, (with Cotton and Kandi); III, Horse gram, (Ulava); IV, Lamp-oil, (Amudalu); V, Metta Sazza; and they were sup-

5. The bulk of the land is always under Paira Jonna, and the only other crop cultivated to any great extent is Aruga. Lamp-oil is sown to about half the extent that Aruga is, and the area under Horse-gram is very insignificant. Paira Jonna and Aruga need, therefore, to be taken into our calculations in assessing the land. To take Lamp-oil at all is impracticable; the nature of the crop prevents its outturn being ascertained, and consequently its value can be expressed in no way. Horse-gram, when the area under it is considered, might, with advantage I think, be omitted from our calculations, in any direct mode.

6. From personal and other inquiries through the taluk, I have generally found Aruga stated to be relatively either a less profitable crop than Lamp-oil; or of about equal profit to the ryot. The same as regards Horse-gram. And, considering that such is the case, it will, I think, be sufficient and fair for assessment purposes to consider them all three to be equally productive; and take solely Aruga as the crop to be included in our calculations, in all cases where Paira Jonna does not apply.

7. I, therefore, recommend that Paira Jonna and Aruga be taken as the crops on which to base the calculations of the productive power of the different soils of Atmakuru. I have done so in all my present calculations.

8. I now come to the question of the relative power of the several soils to be cropped with the grains thus selected for the taluk. In your letter of the 31st January last, No. 15, you requested me to give my attention "to the number of years that the soil under consideration can be or usually is so cropped according to the present system of agriculture." The results, worked out in the way you requested, are embodied in Appendices A., B., C., D., E., and F. For as many as ten years back were practicable, extracts were taken from the Revenue accounts. In some instances, the accounts were only forthcoming for three years, and in others for five, six, or seven. They could not always be obtained for ten years. Details in these respects were obtained by Messrs. Pennington and Clogstoun, and by Mr. Martin; also by the Supervisor and principal Head Classifier of the settlement party, as well as by myself. The total number for which extracts were taken from the accounts, and the total number of entries obtained regarding such numbers, are specified below. Each set of extracts have been separately worked up in the same manner, according to the soil and quality appertaining to the several numbers. The result of Messrs. Pennington's and Clogstoun's extracts is shown in Appendix A., and Mr. Martin's and my own in Appendices B. and C.; whilst the Supervisor's and Head Classifier's is given in Appendix D. In Appendix E. the whole of the details have been thrown together and embodied in one general statement; and similarly again in Appendix F., for the entries in respect to the years that the numbers involved were under crop. Each statement distinguishes separately, as far as practicable, the details of the regada or stiff soils; likewise the mixed soils; and lastly, the red and stony soils; for they require separate consideration, as regards their power to produce the standard crop for a series of years.

	Total of numbers for which extracts were taken.	Total entries regarding the numbers obtained from accounts.
Messrs. Pennington and Clogstoun	33	220
Mr. Martin	31	189
Mr. Rundall	112	698
Supervisor and Head Classifier	115	865
Total...	291	1,972

9. For the numbers that the crop was measured by the Classifiers throughout the taluk, details regarding the crops cultivated during the previous four or five years in such fields, were obtained from the ryots and authorities of the villages, and duly recorded in their reports. Particulars were thus obtained regarding some 350 fields; and having been worked up in manner similar to that above explained, the result is embodied in Appendix G., and is very similar to that shown by Appendix E.

10. The total soils of the taluk as classified number 30, and for the purpose of considering and dealing with them as regards their power to produce the standard crop, it is necessary to separate them as follows:— First, the regada or heavy clayey soils; secondly, the mixed Regadas; thirdly, the Tuvva and sandy soils; and lastly, the red soils.

Regada soils.	Mixed Regada and soils.	Tuvva and sandy soils.	Red soils.
Nalla Regada	Gulaka Regada	Tuvva Nela	Yerra Nela.
Tella Regada	Tuvva Regada	Tuvva Tella Nela... ...	Yerra Isuka Banka Nela.
Vendali Regada... ...	Tuvva Banka Nela ...	Chavati Isuka Nela ...	Tuvva Yerra Nela.
Tuvva Banka Regada.	Isuka Banka Nela ..	Vandali Nela	Yerra Garavu.
Masara Regada... ..	Vendali Banka Nela ..	Tuvva Isuka Nela ...	Morasa Yerra Nela.
Banka Regada... ...	Chavati Isuka Banka Nela.		Gulakarati Nela.
	Chavati Tuvva Banka Nela.		Gulakarati Yerra Nela.
Isuka Banka Regada.	Chavati Banka Nela...		Gulakarati Yerra Garavu.
	Gulakarati Garavu ...		Kondarati Yerra Garavu.

11. Looking at the details for the soils thus collected, and viewing them as regards the division above made, it is clearly to be concluded therefrom, more especially with reference to Appendices E. and F., that as a rule Paira Jonna is cultivated in the first of these soils to a far greater extent than any other crop, and in fact that any other crop is comparatively rarely grown. The same as regards the mixed regada and soils. In the former soils the greatest proportion that either Appendix shows to be under Aruga is 10 per cent.; and amongst the latter soils 12 per cent.: or as regards individual fields that they may once in 10 or 8 years, respectively, be cropped with Aruga: or taking the Aruga and other actual crops than Paira Jonna in one lump, that it is only once in either six or five years that they can be sown with crops other than Paira Jonna. Tuvva soils likewise show that Paira Jonna is, to an extent, almost equal with the mixed regada, &c., soils, cultivated therein; and that Aruga and the other crops are only cultivated to about the same extent as in the before-mentioned description of soils. The red soils show very distinctly quite a different result. Of the crops sown, the details show about 50 per cent., or one-half of the land to be under Paira Jonna; 20 per cent., or one-fifth to be under Aruga; and about 16 per cent., or one-sixth to be under Lamp-oil. Flinging Aruga and all crops other than Paira Jonna together, they likewise amount to about one-half.

12. The conclusions to be drawn from Appendix G., are very much the same as the above.

13. It is requisite, however, to bear in mind that, except in the instance of some of the numbers first selected by myself, the Supervisor and Head Classifier, before the commencement of the Jonna harvest, the extracts taken from the Revenue Accounts had almost entire reference to the lands under Paira Jonna during the current Fusly, which we respectively measured. This may consequently tend to show a higher proportion of the whole land to be under Paira Jonna, than actually is cultivated on the whole. I am very confident in this respect, knowing that there are in parts considerable tracts of land (but generally red soil though), in which Paira Jonna is but seldom or ever sown.

14. Viewing the results generally, they may be taken to harmonize very fairly, on the whole, with the other statistics* to hand in this respect; and they are further borne out, in a great measure, by my own experience.

15. It is quite certain, that the higher qualities of the regada soils will comparatively, and do now according to the present system pursued, stand, being cropped year after year, with Paira Jonna; whilst the lower qualities of the same soil have not the power of producing the standard to the same extent. I have noticed many instances of this. It is, in some measure, due no doubt to the far more favorable treatment that the higher qualities of the respective soils receive, than the lower qualities.

16. Having thus stated at some length the result of the information collected in conformity with your letter, No. 75, previously alluded to, it is requisite that I should give expression to my opinion, as to the power of the respective soils and their qualities, to produce the standard crop. Before, however, proceeding to do so, there is yet one other subject which here needs to be referred to; and my views thereon made known at the same time. I allude to the question as to how long the several soils and their qualities may, on the average, be considered capable of being cropped. This brings me to the matter of fallows. It may, I suppose, be concluded, without any questioning of a conclusion formed in this respect, that throughout Atmakuru, fallows do not form any part of the actual system of cultivation pursued by the ryots generally. Here and there a little occupied waste may be found uncultivated, owing to various causes; but not consequent on any regular system of fallowing, for renovating, the land being in force. The usual course is, as has been already mentioned with reference to Atmakuru, to work the soil out, and then to relinquish it altogether.* This can, however, be said to apply only to the red and poorest description of soils. The ryots, I think, trust to work their fair and medium soils with advantage, merely by the aid of such manure as they have, or have the power of obtaining.

17. The only information to hand in this respect, is to be gathered from Appendices A., B., C., D., and E.; and it is to be observed that the proportion of land occupied, that is recorded as being waste, is most minute. I dare say it very nearly represents the actual occupied area ordinarily under the plough, left uncultivated in the taluk during a favorable year, like the past was on the whole. The proportion of the unoccupied waste shown to exist by the Appendices, is pretty considerable; but it cannot be taken to be the extent ordinarily relinquished and left waste; for I know so many instances to the contrary. During the past few years, and since the demarcation in the first instance, a very considerable extent of land has been newly occupied in Atmakuru. It very often comprised land that had not been under the plough previously, or else not for a very long series of years. As regards myself, I know several such numbers were amongst those for which I extracted the details for former years.

18. Notwithstanding the fact that fallows do not form part of the agricultural system of the portion of the District now under report, yet, when it is considered that fallowing is a necessary part of a wholesome system of husbandry, it would be, I think, a wise and sound policy to make such provision as will allow of land being retained in occupation when exhausted and needing rest; instead of so assessing it that when unproductive the ryot is forced to give it up. The restrictions that need to be placed on land under wood, will probably tend to decrease the area available for grazing purposes; and it is consequently to be anticipated that the demand, now on the increase, will be yet further heightened, and render impolitic, as a general rule, the relinquishment at all of land by ryots of any status. Under these circumstances, I recommend that for the necessary fallowing of lands a fair allowance be made. I observe, that Government, by paragraph 9 of their Order† regarding the mode of settling this district, wish a deduction to be made in this respect, and the proper allowance that may be judged as fair for each taluk to be duly shown, together with the grounds of the recommendation; one rate being shown for both fallows and contingencies of seasons.

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* Vide abstract given at paragraph 4.

* Vide Report of the late Mr. Embley on the agricultural system of the Taluk.

† 12th December 1864, No. 2,243.

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19. On the several subjects, my views in all these respects are embodied in the subjoined statement, which is drawn up according to the soils and their different qualities as separated by me, for the purpose of calculating the different cultivation expenses.* For contingencies of season alone, one-sixth or sixteen in a hundred seems, in my opinion, a fair allowance, and I have provided accordingly. Some years are fair seasons, some indifferent or bad; and out of six years, two if not three may, I take it, be reasonably considered fair seasons; and one-sixth thus provides a good deduction in the indifferent ones.

Soils and qualities.		Number of years to be taken as respectively sown under Jonna and Aruga.		Number of years in which an allowance of one for fallow is requisite.	Taking the deductions for contingencies of seasons at 16 in the 100, the deduction to be made for fallow is rendered with it, and total given.		Proposed deducuon for both fallow and other contingencies under each soil.
		Jonna.	Aruga.				
Class A.							
Nela Regada......... Tella Regada......... Vandali Regada......... Tuvva banka Regada...... Masara Regada......... Banka Regada......... Isuka banka Regada......	10 or 8	Four years.	One year.	Eight... ...	12+16=	28	30
Class B.							
As above.........	6	Do.	Do.	Do.	12+16=	28	30
Class C.							
As above.........	4	Three years.	Do.	Six...... ...	16+16=	32	33
Class D.							
As above.........	2	Do.	Do.	Five.........	20+16=	36	33
Class E.							
Gulaka Regada......... Tuvva Regada......... Tuvva Banka Nela......... Isuka Banka Nela......... Vandali Banka Nela......	6	Four years.	Do.	Eight... ...	12+16=	28	30
Class F.							
Gulaka Regada......... Tuvva Regada......... Tuvva Banka Nela......... IsukaB anka Nela......... Vandali Banka Nela...... Chavati Isuka Banka Nela.. Chavati Tuvva Banka Nela. Chavati Banka Nela.........	4	Three years.	Do.	Six...... ...	16+16=	32	33
Class G.							
Gulaka Regada......... Gulakarati Garavu......... Tuvva Regada......... Tuvva Banka Nela......... Isuka Banka Nela......... Vandali Banka Nela...... Chavati Isuka Banka Nela. Chavati Tuvva Banka Nela. Chavati banka Nela.........	2	Two years.	Do.	Five.........	20+16=	36	33
Class H.							
Yerra Nela......... Yerra Isuka Banka Nela...	4	One year.	Do.	Do.	20+16=	36	33

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* Appendix L.

Soils and qualities.		Number of years to be taken as respectively sown under Jonna and Aruga.		Number of years in which an allowance of one for fallow is requisite.	Taking the deductions for contingencies of seasons at 16 in the 100, the deduction to be made for fallow is rendered with it, and total given.		Proposed deduction for both fallow and other contingencies under each soil.
		Jonna.	Aruga.				
Class I.							
Yerra Nela.................. Yerra Isuka Banka Nela.. Morasa Yerra Nela......... Gulakurati Nela............ Gulakarati Yerra Nela ... Kondarati Yerra Garavu... Gulakarati Yerra Garavu. .	2	One year ...	Two years	Four.........	25+16=	41	40
Class J.							
Tuvva Nela........ .... Tuvva Tella Nela............ Chavati Isuka Nela......... Tuvva Isuka nela ... . Vandali Nela......	4	Do.	One year.	Five...... ...	20+16=	36	33
Class K.							
Tuvva Nela................... Tuvva Tella Nela............ Chavati Isuka Nela......... Tuvva Isuka Nela ... ... Vandali Nela.........	2	Do.	Do.	Do......... ...	20+16=	36	33
Class L.							
Tuvva Yerra Nela... ...... Yerra Garavu...	4	Do.	Do.	Do......... ...	20+16=	36	33
Class M.							
Tuvva Yerra Nela...... ... Yerra Garavu......	2	Do.	Two years	Four.........	25+16=	41	40

20. Thus the deduction I propose on all soils that range from six to ten times is 30 per cent.; on 4-tums soils 33 per cent.; and on the 2-tums soil 33 and 40 per cent.

21. The experiments recently made in the dry crops of the taluks and the results obtained, is the next matter for deliberation. The details of the number of experiments made are given below.

The only two crops that were really kyled, were Paira Jonna and Aruga; an odd kyle or two of horse-gram was obtained; but no result can be gleaned from the same, or is it necessary to do so for the reasons expressed above at paragraph 6.

Crops.	Number of experiments made altogether.	
	By the settlement party.	By the revenue authorities
Paira Jonna ...	459	73
Aruga...	55	0
Horse-gram... ...	1	0

NOTE.—459 measurements were made under Paira Jonna. Some exceptional ones were struck out from the statement and are particularized at the foot of Appendix H.

22. The experiments made as regards Paira Jonna and Aruga, after having been embodied in Statement No. 13 of the respective villages, were flung together and abstracted, according to the soils as confirmed on revision. From these abstracts one general statement has been prepared for either crop, showing first the results of the experiments made by the revenue authorities, those made by the Head and Assistant Collectors being separated from those of the taluk authorities; and afterwards the results of the experiments made by the Settlement Party, those which I measured being shown distinct from the experiments made by the Supervisor and the Classifiers. These statements are enclosed as Appendices H. and I.

23. An abstract of the results of the measurements made in the several qualities of the soils as classified, both of the Paira Jonna and Aruga crops, is given below.

Standard Tums of Paira Jonna.

As regards the former crop, the average result obtained bears out very closely the productive power assigned to the several soils. The details, however, vary to a considerable extent I must say, in some instances. As regards the 2-tum class, I do not consider that we are to conclude that, on the average of all land so rated, 2 tums must be taken as the average productive power of such soils. There is a less proportion of the land so rated ordinarily cultivated with Paira Jonna, than in any other of the classes. We have experiments only of the portion under Paira Jonna, which may reasonably be taken to be the best or most productive portion of this class of land. The remaining portion we must consider to be less productive, so that the average may, in my opinion, be fairly taken as under, and not over 2 tums.

Paira Jonna.		
Qualities.	Total number of experiments	Average result of the measurement.
10 Tums	2	13
8 do.	10	8½
6 do.	40	6½
4 do.	183	3¾
2 do.	228	2¾

Aruga.		
Qualities.	Total number of experiments	Average result of the measurements.
* 8 Tums	1	6½
4 do.	8	7
2 do.	40	6¼

24. It is requisite for me to remark, with reference to the several kyles I made in the 4-tum class of Gulaka regada—13 in number averaging 2¾ tums—that, for the most part, they were measured in the Karatampad village, the crops of which were peculiarly circumstanced, and indifferently bad, owing to the treatment the land had received.

25. Nothing like so many opportunities occurred of obtaining experiments of the Aruga crop, though, as in the case of Paira Jonna, every effort was used. The comparatively small area under the crop in the taluk, satisfactorily accounts for this. The experiments in Aruga are, to my mind, too few and varied to rely on to any great degree, in determining the average productive powers of the several classes of land, under that crop. With another season there will be more particulars to hand respecting Aruga. I therefore deem it now to be more preferable to take the general accepted proportion that the ryots consider the produce of the Aruga crop to bear to the Paira Jonna crop, viz., two to one.

26. And thus considering the results arrived at by the Paira Jonna measurements to be satisfactory, and to bear out the power of production that has been assigned to the soils. I advocate the productive power of the same under Aruga to be, for the causes already given, considered as much again as their productive powers under Paira Jonna. In working out the result of the expenses, and the outturn of the Aruga crop, I have adopted these views.

27. The experiments made during the season of 1864-65 by the Tahsildar and taluk authorities of Atmakuru, in respect to the Paira Jonna and Aruga crops then measured, are furnished in Appendices J. and K., and have been worked up in manner similar to the experiments of the current year, as specified above at paragraph 22.

28. The rates applied to the soils are, to some slight extent, borne out by these experiments; but I should not think it prudent to rely on these measurements to any very great degree. They are the result of the first attempt made by the authorities of the taluk.

29. In Appendix L. is rendered the cultivation expenses of the several soils and their qualities, as worked out by me from information gathered from the people of the taluk; and my own experience in such respects for both the Paira Jonna and Aruga crops, viewed in any light cultivation expenses, and similar calculations, can but be deemed as approximately showing what probably is a fair allowance to make for the purposes intended. I have endeavoured to work out the details in the best manner that experience suggested, following closely the directions given in the Government Order of the 12th December 1864, No. 2,243.

30. As mentioned above at paragraph 19 for the purpose of calculating the several expenses of cultivation, and of arriving at results in respect thereto, I found it requisite to separate the soils. Five actual divisions have been made of the soils, first, the several qualities of the heavy regada soils which I have classed A. to D; secondly, the several classes of the light and loose regada

and similar soils classed as E. to G.; thirdly, the red stony, hard, and gravelly soils, classed as H. and I.; fourthly, the tuvva and sandy soils; and lastly, the light red soils, classed respectively J. K. and L. M.

31. The several operations that I have separately allowed for and calculated are enumerated below:—

1. Cost for bullocks.
2. Cost of implements, &c.
3. Cost for ploughing.
4. Cost for manuring.
5. Seed expended.
6. Cost for watching.
7. Cost of cutting and stacking.
8. Cost of thrashing out.
9. Cost of storing.

32. As a rule, I have calculated the grain cost of each operation, and rendered the same in tums and Chinna Muntas,* in which measure I found the ryots usually calculated their dealings with the laborers they hired. It was impracticable to render in grain the cost under the first two heads, and, therefore, the money value has been inserted. Finding some difficulty in making calculations for a single acre, I have taken an area of ten acres; and thus calculating out the cost for the same, have, after commuting the grain into money, and the money cost into grain, shown under one head the total cost of the ten acres in money and next in grain; and afterwards the cost per acre under each head. I have, in doing this, adopted the commutation rate of Rupees 27-8-0, recommended in my letter of the 22nd instant, No. $\frac{125}{78}$.

33. In making out the cost for bullocks and implements, I have been guided by what a real ryot, having two or more ploughs, can effect; and have considered part of the land cultivated to be under Paira Jonna and part under Aruga, (or crops similar thereto,) according to the proportions given in the Statement rendered above at paragraph 19, and in conformity with which I propose the mean of the average produce should be fixed.

34. Having thus arrived at the average cost per acre for the several qualities of each description of soil, I have next added thereto in abstract form, as required by paragraph 12 of the Order of Government before referred to, the cost of keeping the necessary stock of cattle, and thus have given the total cost under all the heads of expenditure that can be incurred. The cost for both Paira Jonna and Aruga has been similarly calculated in all necessary respects. Against the total cost under all heads, I have inserted the value according to the proposed commutation price of the produce of each crop; and for Aruga I have taken the productive power of the land to be as much again as when it is under Paira Jonna, as before explained at paragraph 26. The value of the straw has then been added thereto, and the entire outturn has been obtained, as directed in the paragraph of the Government Order just alluded to. From the entire outturn the total cost has been deducted, and the net proceeds duly exhibited.

35. In rendering the value of the straw, I have taken the average value of Jonna Choppa at ten bundles the Rupee, and of Aruga straw at twenty-four bundles the Rupee. These prices may appear low at first sight; but in determining the value, wholesale and not retail, prices need to be considered, and the above prices have consequently appeared to me as the fairest to fix upon. I have of course, allowed Jonna Choppa at the same rate in my calculations of the cost of feeding stock.

36. It will be observed that soils rated at 10 and 8 tums all fall within the regada class. Under 6 tums two classes of land are involved, and in the regada class the proceeds appear less from the cost of working the heavier soil, being proportionately greater. Save in the heavy regada class occasioned by the last named circumstance, the net produce of the different soils rated at 4 tums does not vary to any considerable degree. The same cause effects the heavy regada soils rated at 2 tums, the produce of which varies from that of the other soils similarly rated with the exception of the hard and stony red soils, which likewise, from the increased cost of working them, show less favorable results in respect to net produce, than most of the 2-tum soils.

37. There is one matter that effects considerably the result attained on paper for the lowest class of soils; and that is the charge against the soil for the expenses incurred for keep of stocks, &c., and the charging of the straw produced as an asset in conformity with the Government Order already quoted. The results, on the whole, show the straw to be in value of less amount than the charge incurred for feeding the stock kept up, both as regards the Paira Jonna and Aruga crops for the 2-tums soils; some of the soils rated at 4 tums in respect to the Jonna crop are similarly circumstanced. Whilst thus, in some cases, the net produce to be taken for assessment purposes is lessened, by taking into account the value of the straw, &c., and endeavouring to attain more accurate results; in the case of the 4-tum soils, for the most part, and all the soils that are rated at 6 and more tums, the produce is increased in value. This consequently tends to show different conclusions, than those to be drawn in this respect, from the calculations of cost of cultivation submitted hitherto with the proposals for the settlement of other districts, in which the value of the straw has been taken as a set off against the charge for feeding stock.

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* 2¼ seers, or 180 tolas in weight.

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38. The several recommendations I have made are worked out, and the mean value of the produce duly shown for each soil and its qualities in the annexed statement; likewise the portion of the produce similarly remaining after the deduction for fallow and contingencies of season, advocated above at paragraph 19.

Details regarding soils and qualities.	Net proceeds per acre of each crop.						Number of years taken under each crop for arriving at the mean, and the whole proceeds for the years.								Total of years.	Total of proceeds.			Value of mean produce per acre.			Per-centage of deduction recommended.	Remainder.		
	Jonna.			Aruga.			Jonna.				Aruga.														
	RS.	A.	P.	RS.	A.	P.	Years.	RS.	A.	P.	Years.	RS.	A.	P.	Years.	RS.	A.	P.	RS.	A.	P.		RS.	A.	P.
Class A. } 10...	12	8	0	12	10	0	4	50	0	0	1	12	10	0	5	62	10	0	12	8	5	30	8	12	4
„ „ } 8...	9	10	0	9	14	0	4	38	8	0	1	9	14	0	5	48	6	0	9	10	9	30	6	12	4
„ B. 6...	6	9	8	7	0	6	4	26	6	8	1	7	0	6	5	33	7	2	6	11	0	30	4	10	11
„ C. 4...	3	7	9	4	3	3	3	10	7	3	1	4	3	3	4	14	10	6	3	10	7	33	2	7	1
„ D. 2...	0	11	0	1	6	9	3	2	1	0	1	1	6	9	4	3	7	9	0	13	11	33	0	9	3
„ E. 6...	7	8	5	7	9	1	4	30	1	8	1	7	9	1	5	37	10	9	7	8	7	31	5	4	5
„ F. 4...	4	7	3	4	11	10	3	13	5	9	1	4	11	10	4	18	1	7	4	8	5	33	3	0	4
„ G. 2...	1	2	9	1	11	10	2	2	5	6	1	1	11	10	3	4	1	4	1	5	9	33	0	14	6
„ H. 4...	4	3	7	4	9	4	1	4	3	7	1	4	9	4	2	8	12	11	4	6	5	33	2	15	0
„ I. 2...	0	11	10	1	7	11	1	0	11	10	2	2	15	10	3	3	11	8	1	3	10	40	0	11	11
„ J. 4...	4	8	10	5	2	1	1	4	8	10	1	5	2	1	2	9	10	11	4	13	5	33	3	5	8
„ K. 2...	1	2	7	1	15	4	1	1	2	7	1	1	15	4	2	3	1	11	1	8	11	33	1	0	8
„ L. 4...	4	8	2	4	1	9	1	4	8	2	1	4	1	9	2	8	9	11	4	4	11	33	2	14	0
„ M. 2...	1	3	0	1	15	0	1	1	3	0	2	3	14	0	3	5	1	0	1	1	0	40	1	0	2

39. The differences apparent in respect to the several classes are due, for the most part, to the causes particularized at paragraph 36. They are, however, affected as well by the per-centage of the deductions made.

40. Before submitting these details, I should of course have liked to have seen the general result of the classification of the taluk, as made in the first instance and upon revision; but these results not having yet been completely worked up, and the final revision being still in progress, and not likely to be finished for a few days more it is, of course, impracticable.

41. The system of agriculture pursued in other taluks, similarly circumstanced as regards crops and seasons, is much the same as that adopted throughout the Atmakuru taluk. I have not observed any difference whatever of importance, and, as far as my experience has yet gone, I should not think the average yield and cost will be found to vary much from what has been ascertained for the Atmakuru taluk. At present, sufficient information of a general nature regarding other taluks is not to hand to base any calculations on.

42. The result of the measurement of wet crops, made during the present season by the Settlement Party and taluk authorities, is furnished as Appendix M., and of those made by the taluk authorities during the season of 1864-65, as Appendix N. They have been worked up according to the qualities of the several soils in manner similar to the dry experiments; but the classification being based on the dry productive power of the soils, it is difficult to deduce any results from the conglomeration of details they present.

43. The same cause prevents calculations of soils according to their qualities under irrigation, being made as regards cultivation expenses, and they cannot be got to harmonize with a classification according to dry productive powers. To render, therefore, the expenses of wet cultivated, I have endeavoured to separate the soils usually met with under irrigation, into three heads. The heavy clayey or regada soils; the moderately heavy and mixed regada soils; and the light loose or sandy soils. According to these three heads, I have worked out the general cost of cultivation, and now furnish the details in Appendix O. I have adopted the ordinary course, and made every requisite provision that could occur to me. The cost of feeding cattle has been shown after the other expenses; likewise the value of the straw which has been included as an asset at the rate of sixteen bundles the Rupee. In commuting the grain, the rate of Rupees 23-12-0, or Rupee 1 3-0 per tum, as recommended by me for paddy, has been adopted. I regret my inability to give the average out-turn per acre. Whatever I might mention in this respect, would be such mere conjecture that I refrain from showing any out-turn, save of the straw, which does not vary so much as the grain, and is given as a set off in part against the cost of feeding cattle; but even for this, I deem the data I have to be liable to correction.

44. Nothing further occurs to me than to add that, throughout the period, operations were in progress in Atmakuru; and since I have seen no necessity for any gradation of villages by grouping so much similarity in most respects existing throughout them, and that I trust I have now furnished you on every required point, with full information.

45. In conclusion, I have the honor to inform you that the thirty soils as classified for Atmakuru, would, according to the ordinary standard of the Revenue Settlement Department, fall under the several series and classes below specified:—

Regada Clay Classes III., IV., V.

1. Tella Regada.
2. Nela Regada.
3. Vandali Regada.
4. Masara Regada.
5. Tuvva Banka Regada.
6. Banka Regada.
7. Isaka Banka Regada.
8. Gulaka Regada.
9. Tuvva Regada.
10. Vandali Banka Nela.
11. Chavati Banka Nela.
12. Tuvva Banka Nela.

13—13. Isuka Banka Nela.

Red Clay Classes VI., VII., VIII.

1. Yerra Nela.
2. Yerra Isuka Banka Nela.
3. Tuvva Yerra Nela.
4. Gulakarati Yerra Nela.
5. Morasa Yerra Nela.
6. Yerra Garavu.
7. Gulakarati Yerra Garavu.
8. Kondarati Yerra Garuvu.

9—9. Gulakarati Nela.

22

Arenaceous Classes, XII., XIII., XIV.

1. Tuvva Nela.
2. Tuvva Tella Nela.
3. Chavati Isuka Banka Nela.
4. Chavati Tuvva Banka Nela.
5. Gulakarati Garuvu.
6. Vandali Nela.
7. Chavati Isuka Nela.

8—8. Tuvva Isuka Nela.

30 Total.

APPENDIX L.

ESTIMATED *cost of the cultivation of* 10 *acres of Jonna, on the several classes of soil met with in the classification of the Atmakuru Taluk.*

Particulars of the class of soils, and their quality.		Cost for bullocks.			Cost of implements.			Cost for ploughing.		Cost for manuring.		Seed expended		Cost for watching crop.		Cost of cutting, carting, and stacking.		Cost of thrashing out crop.		Cost of storing crop.		Total of cost for the 10 acres.					Cost in money and in grain for the 10 acres commuting at Rs. 27½ per putty.					Cost per acre in money.			Cost per acre in grain.	
																						Columns 1 and 2.			Columns. 3 to 9.		Money.			Grain						
		1			2			3		4		5		6		7		8		9		10					11					12			13	
		RS.	A.	P.	RS.	A.	P.	T.	C.M.	T.	C.M.	T.	C.M.	T.	C.M.	T.	C.M.	T	C.M	T.	C.M.	RS.	A.	P.	T.	C.M.	RS.	A.	P.	T.	C.M	RS.	A.	P.	T.	C.M.
Class A.																																				
Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	10 or 8	8	10	8	3	1	0	2	21	1	5	0	22	0	24	2	1	2	21	0	4	11	11	8	10	23	26	11	11	19	11	2	10	9	1	23
Class B.																																				
Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	6	8	10	8	3	1	0	2	21	1	5	0	22	0	24	1	17	2	11	0	4	11	11	8	10	4	25	11	2	18	17	2	9	1	1	21
Class C.																																				
Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	4	8	10	8	3	1	0	2	21	0	20	0	22	0	16	1	7	1	23	0	3	11	11	8	8	12	23	6	3	17	0	2	5	5	1	17
Class D.																																				
Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	2	7	3	6	2	8	10	2	4	0	12	0	20	...	...	1	1	1	17	0	2	9	12	4	6	6	18	5	7	13	8	1	13	4	1	8
Class E.																																				
Gulaka Regada Tuvva do Tuvva Banka Nela Isuka do. do. Vandali do. do.	6	5	8	4	2	7	2	2	4	1	5	0	20	0	24	1	17	2	11	0	4	7	15	6	9	6	20	10	9	15	1	2	1	1	1	17
Class F.																																				
Gulaka Regada Tuvva do. Tuvva Banka Nela Isuka do. do. Vandali do. do. Chavati Isuka Banka Nela Chavati Tuvva do. do. Chavati Banka Nela	4	5	8	4	2	7	2	1	17	0	20	0	20	0	16	1	7	1	23	0	3	7	15	6	7	6	17	14	9	13	1	1	12	8	1	7
Class G.																																				
Gulaka Regada Gulaka Rati Garuvu Tuvva Regada Tuvva Banka Nela Isuka Banka Nela Vandali Banka Nela Chavati Isuka Banka Nela Chavati Tuvva Banka Nela Chavati Banka Nela	2	5	2	6	2	4	8	1	17	0	12	0	20	...	..	1	0	1	17	0	2	7	7	2	5	18	15	5	0	11	3	1	8	6	1	2
Class H.																																				
Yerra Nela Yerra Isuka Banka Nela	4	5	15	10	2	13	10	1	17	0	20	0	20	0	16	1	7	1	23	0	3	8	13	8	7	6	18	12	11	13	17	1	14	1	1	9

Estimated cost of the cultivation of 10 *acres of Jonna, &c.*—*(Concluded.)*

Particulars of the class of soils, and their quality.		Cost for bullocks.	Cost of implements.	Cost for ploughing.	Cost for manuring.	Seed expended.	Cost for watching crop.	Cost of cutting, carting, and stacking.	Cost of thrashing out crop.	Cost of storing crop.	Total of cost for the 10 acres. Columns 1 and 2.	Total of cost for the 10 acres. Columns 3 to 9.	Cost in money and in grain for the 10 acres commuting at Rs. 27½ per putty. Money.	Cost in money and in grain for the 10 acres commuting at Rs. 27½ per putty. Grain.	Cost per acre in money.	Cost per acre in grain.
		1	2	3	4	5	6	7	8	9	10		11		12	13
		RS. A. P.	RS. A. P.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.
Class I.																
Yerra Nela.............. Yerra Isuka Banka Nela Masara Yerra Nela ... Gulaka Rati Nela...... Gulaka Rati Yerra Nela Konda Rati Yerra Garuvu.................... Gulaka Rati Yerra Garuvu....................	2	5 15 10	2 13 10	1 17	0 20	0 20	... ...	1 0	1 17	0 2	8 13 8	6 1	17 2 7	12 12	1 11 5	1 6
Class J.																
Tuvva Nela .... Tuvva Tella Nela ...... Chavati Isuka Nela ... Tuvva do. do. ... Vandali Nela...........	4	5 5 4	2 10 8	1 10	0 20	0 20	0 16	1 7	1 23	0 3	8 0 0	6 24	17 9 1	12 19	1 12 1	1 7
Class K.																
Tuvva Nela .... Tuvva Tella Nela ...... Chavati Isuka Nela ... Tuvva do. do. ... Vandali Nela...........	2	5 5 4	2 10 8	1 0	... ...	12 20	... ...	1 0	1 17	0 2	8 0 0	5 1	14 14 11	10 21	1 7 11	1 2
Class L.																
Tuvva Yerra Nela...... Yerra Garuvu............	4	5 6 6	2 11 1	1 10	0 20	0 20	0 16	1 7	1 23	0 3	8 1 7	6 24	17 10 8	12 21	1 12 3	1 7
Class M.																
Tuvva Yerra Nela...... Yerra Garuvu	2	5 6 6	2 11 1	1 0	... ...	0 20	... ...	1 0	1 17	0 2	8 1 7	4 14	14 5 11	10 11	1 7 0	1 1

ABSTRACT *of the cultivation of Jonna.*

Detail regarding soils and qualities.		COST PER ACRE.			OUTTURN PER ACRE.					Net produce deducting column 4 from column 9.
		Total as already given.	Cost of feeding stock.	Total.	Number of tums.	Value at Rs. 27-8 per Putty	Straw bundles.	Value at 10 bundles per Rupee.	Total value of outturn per acre.	
1		2	3	4	5	6	7	8	9	10
		RS. A. P	RS. A. P.	RS. A. P.		RS. A. P		RS. A. P.	RS. A. P.	
Class A...	10	2 10 9	2 1 3	4 12 0	10	13 12 0	35	3 8 0	17 4 0	12 8 0
	8	2 10 9	2 1 3	4 12 0	8	11 0 0	35	3 8 0	14 8 0	9 12 0
„ B......	6	2 9 1	2 1 3	4 10 4	6	8 4 0	30	3 0 0	11 4 0	6 9 8
„ C......	4	2 5 5	2 1 3	4 6 8	4	5 8 0	24	2 6 5	7 14 5	3 7 9
„ D......	2	1 13 4	1 11 8	3 9 0	2	2 12 0	15	1 8 0	4 4 0	0 11 0
„ E......	6	2 1 1	1 10 6	3 11 7	6	8 4 0	30	3 0 0	11 4 0	7 8 5
„ F......	4	1 12 8	1 10 6	3 7 2	4	5 8 0	24	2 6 5	7 14 5	4 7 3
„ G......	2	1 8 6	1 8 9	3 1 3	2	2 12 0	15	1 8 0	4 4 0	1 2 9
„ H......	4	1 14 1	1 12 9	3 10 10	4	5 8 0	24	2 6 5	7 14 5	4 3 7
„ I......	2	1 1 5	1 12 9	3 8 2	2	2 12 0	15	1 8 0	4 4 0	0 11 10
„ J......	4	1 12 1	1 9 6	3 5 7	4	5 8 0	24	2 6 5	7 14 5	4 8 10
„ K......	2	1 7 11	1 9 6	3 1 5	2	2 12 0	15	1 8 0	4 4 0	1 2 7
„ L......	4	1 12 3	1 10 0	3 6 3	4	5 8 0	24	2 6 5	7 14 5	4 8 2
„ M......	2	1 7 0	1 10 0	3 1 0	2	2 12 0	15	1 8 0	4 4 0	1 3 0

ESTIMATED *cost of cultivation for ten acres of Aruga on the several classes of soil met with in the classification of the Atmakuru Taluk.*

Particulars of the class of soils, and their quality.		Cost for bullocks.	Cost of implements.	Cost for ploughing.	Cost for manuring.	Seed expended.	Cost for watching crop.	Cost of cutting, carting, and stacking.	Cost of thrashing out crop.	Cost of storing crop.	Total of cost for the ten acres. Columns 1 and 2.	Total of cost for the ten acres. Columns 3 to 9.	Cost in money and in grain for the ten acres commuting at Rs. 13¾ per putty. Money.	Cost in money and in grain for the ten acres commuting at Rs. 13¾ per putty. Grain.	Cost per acre in money.	Cost per acre in grain.
		1	2	3	4	5	6	7	8	9	10		11		12	13
		RS. A. P.	RS. A. P.	T. C.M.	T. C.M.	T. C.M	T. C.M.	T. C.M.	T. C.M.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M
Class A. Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	10 & 8	5 5 4	1 14 0	2 21	... ...	1 13	... ..	4 16	1 20	0 20	7 3 4	11 15	15 2 11	22 2	1 8 3	2 5
Class B. Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	6	5 5 4	1 14 0	2 21	... ...	1 13	... ...	3 21	1 13	0 20	7 3 4	10 13	14 7 0	21 0	1 7 1	2 2
Class C. Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	4	5 5 4	1 14 0	2 21	... ...	1 13	... ...	3 2	1 7	0 12	7 3 4	9 5	13 8 6	19 17	1 5 8	1 24
Class D. Nalla Regada Tella do. Vandali do. Tuvva Banka Regada Masara Regada Banka do. Isuka Banka Regada	2	4 6 10	1 9 0	2 14	... ...	1 4	... ...	2 8	1 1	0 7	5 15 10	7 9	11 0 10	16 2	1 1 8	1 15
Class E. Gulaka Regada Tuvva do. Tuvva Banka Nela Isuka do. do. Vandali do. do. Chavate Isuka Banka Nela Chavate Tuvva Banka Nela	6	3 5 4	1 7 4	2 14	... ...	1 13	... ..	3 21	1 13	0 20	4 12 8	10 6	11 13 4	17 5	1 2 11	1 18
Class F. Gulaka Regada Tuvva do. Tuvva Banka Nela Isuka do. do. Vandali do. do. Chavate Isuka Banka Nela Chavate Tuvva Banka Nela Chavate Banka Nela	4	3 5 4	1 7 4	2 14	... ...	1 13	... ...	3 2	1 7	0 12	4 12 8	8 23	10 14 9	15 22	1 1 6	1 14
Class G. Gulaka Regada Gulakarate Garuvu Tuvva Regada Do. Banka Nela Isuka do. do. Vandale Isuka Banka Nela Chavate Isuka Banka Nela Chavate Tuvva Banka Nela Chavate Banka Nela	2	3 0 4	1 4 1[illegible]	2 1[illegible]	... ...	1 4	.. ...	2 8	1 1	0 7	4 5 2	7 9	[illegible] 6 2	13 16	0 15 0	1 9

Estimated cost of cultivation for ten acres of Aruga on the several classes, &c.—(Concluded.)

Particulars of the class of soils, and their quality.		Cost for bullocks.	Cost of implements.	Cost for ploughing.	Cost for manuring.	Seed expended.	Cost for watching crop.	Cost of cutting, carting, and stacking.	Cost of thrashing out crop.	Cost of storing crop.	Total of cost for the ten acres. Columns 1 and 2.	Total of cost for the ten acres. Columns 3 to 9.	Cost in money and in grain for the ten acres commuting at Rs. 13¾ per putty. Money.	Cost in money and in grain for the ten acres commuting at Rs. 13¾ per putty. Grain.	Cost per acre in money.	Cost per acre in grain.
		1	2	3	4	5	6	7	8	9	10		11		12	13
		RS. A. P.	RS. A. P.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.
Class H. Yerra Nela.............. Do. Isuka Banka Nela.	4	3 11 2	1 13 2	2 14	... ...	1 4	... ...	3 2	1 7	0 12	5 8 4	8 14	11 6 6	16 14	1 2 3	1 16
Class I. Yerra Nela.............. Do. Isuka Banka Nela. Marasa Yerra Nela ... Gulakarate Nela ...... Do. Yerra Nela... Kondarate Yerra Garuvu.................... Gulakarate Yerra Garuvu	2	3 11 2	1 13 2	1 20	... ...	1 4	... ...	2 8	1 1	0 7	5 8 4	6 15	10 0 11	14 15	1 0 1	1 11
Class J. Tuvva Nela .... Do. Tella Nela ...... Chavate Isuka Nela ... Tuvva do. do. ... Vandale Nela...........	4	2 10 8	1 5 4	1 10	.. ...	1 4	... ...	3 2	1 7	0 12	4 0 0	7 10	9 1 5	13 5	0 14 6	1 8
Class K. Tuvva Nela.............. Do. Tella Nella ...... Chavate Isuka Nela ... Tuvva do. do. ... Vandale Nela...........	2	2 10 8	1 5 4	1 10	... ..	1 4	... ...	2 8	1 1	0 7	4 0 0	6 5	8 4 2	12 0	0 13 3	1 2
Class. L. Tuvva Yerra Nela...... Yerra Garuvu	4	2 11 3	1 5 7	1 10	... ...	1 4	.. ...	3 2	1 7	0 12	4 0 10	7 10	9 2 3	13 7	0 14 7	1 8
Class M. Tuvva Yerra Nela...... Yerra Garuvu............	2	2 11 3	1 5 7	1 10	.. ...	1 4	... ...	2 8	1 1	0 7	4 0 10	6 5	8 5 1	12 2	0 13 4	1 5

ABSTRACT *of the cultivation of Aruga.*

Details regarding soils and qualities.		Cost per acre. Total as already given.	Cost per acre. Cost of feeding stock.	Cost per acre. Total.	Outturn per acre. Number of tums.	Outturn per acre. Value at Rs. 13-12 per Putty	Outturn per acre. Straw bundles.	Outturn per acre. Value at 24 bundles per Rupee.	Outturn per acre. Total value of outturn per acre.	Net produce deducting column 4 from column 9.
1		2	3	4	5	6	7	8	9	10
		RS. A. P.	RS. A. P.	RS. A. P.		RS. A. P.		RS. A. P.	RS. A. P.	
Class A...	10	1 8 3	1 4 5	2 12 8	20	13 12 0	40	1 10 8	15 6 8	12 10 0
	8	1 8 3	1 4 5	2 12 8	16	11 0 0	40	1 10 8	12 10 8	9 14 0
„ B......	6	1 7 1	1 4 5	2 11 6	12	8 4 0	[illegible]	1 8 0	9 12 0	7 0 6
„ C......	4	1 5 8	1 4 5	2 10 1	8	5 8 0	30	1 5 4	6 13 4	4 3 3
„ D......	2	1 1 8	1 1 1	2 2 9	4	2 12 0	20	0 13 4	3 9 4	1 6 7
„ E......	6	1 2 11	1 0 0	2 2 11	12	8 4 0	36	1 8 0	9 12 0	7 9 1
„ F......	4	1 1 6	1 0 0	2 1 6	8	5 8 0	30	1 5 4	6 13 4	4 11 10
„ G......	2	0 15 0	0 14 6	1 13 6	4	2 12 0	20	0 13 4	3 9 4	1 11 10
„ H......	4	1 2 3	1 1 9	2 4 0	8	5 8 0	30	1 5 4	6 13 4	4 9 4
„ I......	2	1 0 1	1 1 9	2 1 10	4	2 12 0	20	[illegible] 4	3 9 4	1 7 11
„ J......	4	0 14 6	0 12 9	1 11 3	8	5 8 0	30	5 4	6 13 4	5 2 1
„ K......	2	0 13 3	0 12 9	1 10 0	4	2 12 0	20	0 13 4	3 9 4	1 15 4
„ L......	4	[illegible]	13	0 1 11 7	8	5 8 0	30	1 5 4	6 13 4	4 1 9
„ M......	2	0 13 4	0 13 [illegible]	4	4	2 12 [illegible]	20	0 13 4	3 9 4	1 15 0

(Signed) C. RUNDALL,
Special Assistant Collector.

NELLORE,
1866.

APPENDIX O.

ESTIMATED *cost of cultivating* 10 *acres of wet cultivation on the average of the wet soils met with in Atmakuru.*

	Cost for bullocks.	Cost of implements.	Cost of manure and manuring the land.		Cost of ploughing.	Cost of seed.	Cost of weeding.	Cost of attending and watering.	Cost of reaping and stacking.
	RS. A. P.	RS. A. P.	RS. A. P.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.	T. C.M.
Heavy Regada Soils.									
1. Nalla Regada ... 2. Masara do ... ... 3. Tella do ... ... 4. Vandili do ... ... 5. Tuvva Banka Regada 6. Isaka Banka Regada. 7. Banka Regada ... 8. Vandali Banka Nela.	12 8 0	3 2 0	4 0 0	1 9	5 3	8 0	6 10	5 6	4 5
Mixed Regada Soils.									
9. Yerra Tuvva Regada 10. Tuvva Banka Nela... 11. Isuka Banka Nela... 12. Chavate Tuvva Banka Nela... ... 13. Chavate Isuka Banka Nela ... ... 14. Chavate Banka Nela. 15. Vandali Nela... ...	10 0 0	2 8 0	4 0 0	1 9	4 3	8 0	5 3	5 6	4 5
Light and Loose and Sandy Soils.									
16. Tuvva Nella ... ... 17. Tuvva Tella Nela ... 18. Tuvva Isuka Nela ... 19. Chavate Isaka Nela. 20. Tuvva Yerra Nela... 21. Yerra Nela ... ... 22. Yerra Garuva... ... 23. Yerra Isuka Banka Nela ... ... 24. Gulakarati Yerra Nela	8 5 4	2 1 4	6 0 0	1 20	3 2	8 0	3 21	5 6	4 5

	Cost of thrashing.	Cost of storing.	Cost of the 10 acres in money and grain.		Total cost of 10 acres in money, and total cost in grain.		Cost per acre in money and in grain.		Average cost per acre in money.	Cost per acre for feeding stock.	Outturn of straw per acre.	
											Bundles.	Value of 16 bundles per Rupee.
	T. C.M.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	T. C.M.	RS. A. P.	RS. A. P.	NO.	RS. A. P.
Heavy Regada Soils. (1–8)	1 15	0 20	19 10 0	32 18	58 7 9	49 6	5 13 7	4 23	5 13 7	3 0 0	40	2 8 0
Mixed Regada Soils. (9–15)	1 15	0 20	16 8 0	30 11	52 10 5	44 8	5 4 3	4 11	5 4 3	2 6 0	32	2 0 0
Light and Loose and Sandy Soils. (16–24)	1 15	0 20	16 6 8	28 14	50 0 0	42 4	5 0 0	4 5	5 0 0	2 0 0	28	1 12 0

NELLORE,
3rd July 1866.

(Signed) C. RUNDALL,
Special Assistant Collector.

Explanation of fluctuation and changes of price.

(I.) 1806.—A season of great distress and scarcity owing to the absence of rain, and consequent failure of most crops, save in the northernmost part of the District. It was likewise a season of heavy loss amongst the cattle.

(II.) 1807.—Consequent on the calamitous nature of the previous year, and scarcity thereby occasioned, prices continued to range at famine rates through the first half of the year. The actual season of the year 1807 was, on the whole, favorable.

(III.) 1812.—A very unfavorable season, following a year of comparative drought, occasioned very high prices to prevail throughout the year.

(IV.) 1813.—A further year of drought in parts of the District, following several seasons of an unfavorable nature, caused prices to range on the average even higher than during the preceding years.

(V.) 1814.—A favorable season; but the three preceding years having been of an indifferent or extremely bad nature, prices continued to range at rather high rates.

(VI.) 1823.—A considerable failure of rain rendered the season extremely unfavorable, and a consequent rise in prices occurred.

(VII.) 1824.—A partial failure of rain, and general failure of most dry crops, consequent on the injury occasioned by insects to the Paira Jonna crop, tended to raise prices to a yet higher average than in the preceding year.

(VIII.) 1832.—A season of great scarcity, distress, and mortality from a general failure of rain; and visitation of cholera and other diseases. The latter part of the year is known as the famine year of 1833.

(IX.) 1833.—The early part of the year comprised the famine year of 1833, and the season of 1833 being of an unfavorable nature, the prices on the average ranged even higher than during the previous year.

(X.) 1842-43.—The depressed state of markets and general stagnation of trade rendered agricultural produce scarcely saleable, and extraordinary low prices ruled during these years.

(XI.) 1852.—A year of heavy floods and excessive rain, occasioning damage to both dry and wet crops.

(XII.) 1856.—A favorable season on the whole, but considerable damage generally, and to irrigation works, was occasioned by the heavy gale of the 1st and 2nd November 1857.

NELLORE,
27th June 1866.

(Signed) C. RUNDALL,
Special Assistant Collector.

(True Extract.)
(Signed) J. W. B. DYKES,
Collector.

Submitted in original as Appendix No. 9, for the information of the Board.

(Signed) J. W. B. DYKES,
Collector.

Appendix No. 10.

The annual revenue with details as to occupation, average yield, and prices.

Appendix No. 11.

Accounts of the village of Kondamidikonduru.

No. 1.
Land Registers.

No. 2.
Inam Registers.

No. 3.
Irrigation Registers Public Sources.

No. 4.
Irrigation Register Private Sources.

No. 5.
Irrigation Register Public Purposes.

	Acres.
Area assessed as irrigable	11,209
.. ..	799
.. ...	3,408

9. The irrigable area in occupation is acres 22,646

The average area irrigated during the last five years as ... margin is ... 15,416

[illegible]

Appendix No. 13.

Statement of the proposed village establishment.

Appendix No 14.

Statement showing the proposed establishment for the conservancy of roads, the repair of district roads, and the ordinary repairs and improvement of public works of irrigation.

Appendix No. 15.

Probable results of the revised rates.

1. Present assessment.

Dry.		Rice.		Total.
Area.	Assessment	Area.	Assessment.	
Acres.	Rupees.	Acres.	Rupees.	Rupees.
1,00,164	1,12,133	22,646	83,525	1,95,658

2. Proposed assessment.

Grain values and arable rates.			Dry.		Rice.		Total
Tums.	Rates.		Area.	Assessment	Area.	Assessment.	
	Rs.	A.	Acres.	Rupees.	Acres.	Rupees.	Rupees.
10	4	0	......	......	85	680	680
7	3	0	161	483	531	3,717	4,200
5	2	0	3,082	6,164	2,992	17,952	24,116
3	1	0	27,358	27,358	9,877	49.385	76,743
2	0 0	12 8	69,563	43,477	9,161	42,369	85,846
			1,00,164	77,482	22,646	1,14,103	1,91,585

3. Difference.

Decrease	34,651	Increase	30,578

Net decrease... 4,073

4. Of the rice, 2,700 acres according to the accounts of 1861-65 are "garden," and have been transferred to "dry" in 1865-66. According to the survey the total area of these garden lands

is 3,160 acres ; and deducting the water-rate thereon, viz., Rupees 12,610, the assessment under the head of rice would be, in round numbers, Rupees 1,00,000, and the net decrease Rs. 17,000

5. To this decrease must be added the items of Pulari that have been abandoned and the fees noted below :—

	Rupees.	
Pulari...	5 867	
Fees.		
Stalakarnams	1,551	
Urtawar	751	
Bhalaravu...	202	
		8,371
Deficit ..		25,000

And this deficit would again be a larger sum were the adjusted assessment to be given for the irrigated area according to the proposed rates.

6. As regards future occupation and probable increase in the revenue, the following figures show the area available ;—

	Detailed classification.	General classification.	Total.
	Acres.	Acres.	Acres.
Total area ...	*2,01,382	*1,13,062	*3,14,444
Occupied ...	1,61,345	17,276	1,78,621
Remainder...	40,037	95,786	1,35,823

* The discrepancy between the figures here and in the report is owing to these being taken from the Jummahbundy, and changes referred to in the Report.

7. Of the area available for future occupation 7,000 acres have been shown by the detailed classification to be unfit for cultivation at the present standard. And striking off altogether 20,000 acres as likely to be found unfit when the isolated hills and river beds have been included, the remainder available would still remain as shown in the margin in round numbers 1,35,000

	Acres.
Remainder...	1,35,823
Isolated hills, &c	18,869
	1,54,692
Unfit for cultivation...	20,000
Remainder	1,34,692

8. Taking the probable deficit at Rupees 30,000, with reference to what an adjusted assessment might be on the rice, and calculating that this reduction in the assessment would be re-placed at once for fallows and pasture, &c., at 12 Annas the acre (the average of the taluk at the proposed rates), the total area to be thus deducted would be acres 40,000

With reference to the proposed increase in the emoluments of the village establishments and the probable increase in the area required for public purposes, a further deduction, as shown in the margin, must be made of ... 10,000

	Rupees.
Present emoluments	16,000
Proposed do	23,000
Difference	7,000 at
Twelve Annas the acre...	9,000 acres
Probable increase for public purposes exclusive of wood	1,000
	10,000

50,000

And the area available for future occupation and net increase would thus be 85,000

9. The irrigable area in occupation is acres 22,646

The average area irrigated, during the last five years as shown in the margin is ... 15,416

The difference is... 7,230

	Acres.
Area assessed as irrigable	11,209
Temporary	799
Garden	3,408
	15,416

And supposing that irrigation be provided for this difference by the proposed cess, and that 500 new wells are sunk irrigating on an average five acres each, then the increase in the irrigable area would be... 9,730

10. Maintaining the proportion observable at present as regards the economy of labor, for an increase, in round numbers, in the irrigated area of 10,000 acres, it may be expected that 40,000 acres would be taken up in due course for grain, &c., which would give an increase at 12 Annas the acre of Rs. 30,000

To this must be added the assessment on the irrigable area provided by the cess with irrigation by improved arrangement and the due maintenance of the supply channels, &c., or 7,000 acres at an average of Rupees 5... 35,000

The result thus becomes a total increase of Rupees 65,000

11. And with this increase in the assessment of 65,000 Rupees as the probable result of the introduction of the revised rates, there would still be left 45,000 acres available for woodlands, as shown in the margin.

	Acres.
Paragraph 8	85,000
Proportionate increase	40,000
	45,000

(Signed) J. W. B. DYKES
Collector.

NELLORE,
7th December 1866.

No. 29.

From J. W. B. DYKES, Esq.,
Collector of Nellore.

To W. HUDLESTON, Esq.,
Secretary to the Board of Revenue.

SIR,

In continuation of my letter of the 11th August, I have the honor to forward the Statements noted in the margin, showing the classification of the soils in the Atmakuru Taluk, according to the usual division into clay, sand, loam, &c., and the proposed rates, compared with the rates already imposed by the Revenue Settlement Department.

APPENDIX XVI.
Statement showing the classification of the soils in the Atmakuru Taluk, according to the usual division by the Settlement Department into clay, sand, loam, &c.

APPENDIX XVII.
Statement showing the rates proposed for the Taluk of Atmakuru, in the Nellore District, compared with the rates imposed by the Settlement Department in other Districts.

2. In the first of these Statements, I have entered the local names given in my letter of the 11th, and used in discussing the soils with the ryots, the class they would fall in according to the Settlement Department, and the rates according to yield that would be thus merged under the several classes. In the second Statement, the merged rates are compared with the rates taken from a Report of the Officiating Director on Kurnool, under date the 27th October 1863.

3. In June, I forwarded samples of the soils with the local names attached to the Chemical Examiner at Madras; and I hope that I shall be able in due course to submit, for the Board's consideration, the corresponding terms according to the English School of Agriculture. Meanwhile, I hope that sufficient information has been submitted to enable the Board to judge of the propriety of introducing the proposed rates for the current year as a tentative measure.

4. And I take this opportunity of submitting a copy of a Report, which I have done myself the honor of addressing to Government on the system pursued as regards Survey and Settlement in Bombay, and other parts in the Empire that I visited during the privilege leave granted to me under date the 7th August last.

ENCLOSURE No. 1.

APPENDIX XVI.

Statement showing the classification of the soils in the Atmakuru Taluk, according to the usual division by the Settlement Department, into clay, sand, loam, &c., and the proposed rates of assessment.

	Local names of soils.	20 Bushels, *373 Madras Measures.		14 Bushels, 261 Madras Measures.		10 Bushels, 186 Madras Measures.		6 Bushels, 112 Madras Measures.		4 Bushels, 74 Madras Measures.		Classification according to the Revenue Settlement Department.		Proposed rates merged according to the classification of the Revenue Settlement Department.	
		Proposed rates of assessment.										Main series.	Sub-divisions and their numbers in the Standard classification.		
		RS.	A.	RS.	A.	RS.	A.	RS.	A.	RS.	A.			RS.	A.
	1. Vandali Regada†	4	0	3	0	2	0	1	0	0	12	Regar clay ...	Pure III......	...	...
	2. Nalla Regada	4	0	3	0	2	0	1	0	0	12			...	...
	3. Tuvva Banka Regada	4	0	3	0	2	0	1	0	0	12			...	...
	4. Tella Regada	...	...	3	0	2	0	1	0	0	12			4	0
	5. Masara do.	...	...	3	0	2	0	1	0	0	12			3	0
	6. Banka do.	...	...	3	0	2	0	1	0	0	12			2	0
	7. Isaka Banka Regada	...	...	...	...	2	0	1	0	0	12			1	0
	8. Gulaka Regada	...	...	...	...	2	0	1	0	0	12			0	12
9	9. Chavati Banka Nela	...	...	...	...	...	...	1	0	0	12			...	...
	10. Tuvva Regada	...	...	...	...	2	0	1	0	0	12	Regar clay ...	Loamy IV ...	...	...
	11. Do. Banka Nela	...	...	...	...	2	0	1	0	0	12			...	...
	12. Isaka Banka do.	...	...	...	...	2	0	1	0	0	12			2	0
	13. Vandali do. do.	...	...	...	...	2	0	1	0	0	12			1	0
	14. Chavati Tuvva Banka Nela	...	...	...	...	...	...	1	0	0	12			0	12
6	15. Do. Isaka do. do.	...	...	..	...	...	...	1	0	0	12			...	...
	16. Tuvva Tella Nela	...	...	...	...	...	...	1	0	0	12			...	...
	17. Vandali Nela	...	...	...	...	...	...	1	0	0	12			...	...

6	18. Tuvva Nela	...	...	...	...	...	...	1	0	0	12	Regar clay ...	Sandy V......	1	0
	19. Chavati Isaka Nela	...	...	...	...	...	..	1	0	0	12			0	12
	20. Gulakarati Garuvu	...	...	...	...	...	...	1	0	0	12			...	...
	21. Tuvva Isaka Nela	...	...	...	...	...	...	1	0	0	12			...	...
3	22. Yerra Nela	...	...	...	...	...	...	1	0	0	8	Red clay	Loamy VII...	1	0
	23. Do. Isaka Banka Nela	...	...	...	...	..	...	1	0	0	8			0	8
	24. Gulakarati Yerra do.	...	...	..	...	...	...	1	0	0	8			...	...
6	25. Morasa Yerra Nela	...	...	...	...	...	...	1	0	0	8	Red clay	Sandy VIII...	...	...
	26. Tuvva do. do.	...	...	...	...	...	...	1	0	0	8			...	...
	27. Yerra Garuvu	...	...	...	...	...	...	1	0	0	8			1	0
	28. Kondarati Yerra Garuvu	...	...	...	...	...	...	...	...	0	8			0	8
	29. Gulakarati Nela	...	...	...	...	...	...	...	...	0	8			...	...
	30. Do. Yerra Garuvu	...	...	...	...	...	...	...	...	0	8			...	...
30															

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* The Madras Measures have been calculated at 120 Tolas of well dried rice, and are not the equivalent of the bushels specified, but of the local measure used— *Vide* paragraph 18 of letter of 11th August 1866.

† The 20 bushel soil of this class would correctly fall under Alluvial Class I. of the Standard of the Revenue Settlement Department.

NELLORE,
7th December 1866.

(Signed) J. W. B. DYKES,
Collector.

Enclosure No. 2.

APPENDIX XVII.

Statement showing the rates proposed for the Taluk of Atmakuru, in the Nellore District, compared with the rates imposed by the Settlement Department in other Districts.

Revenue Settlement standard of classification.		Dry rates of the several settled districts specified at paragraph 25 of Officiating Director's Kurnool Report, No. 1,259-95, dated 27th October 1863.					Proposed rates for soils falling under each class in Atmakuru.
Class.	Sort.	Godavery.	Kistna.	Trichinopoly.	Kurnool.	Average.	
		RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.
II	i.	5 0	3 8	3 4	3 8	3 13	... ...
III	i.	4 0	2 8	1 12	2 8	2 11	4 0 3 0
	ii.	3 0	2 0	1 4	1 8	1 15	2 0
	iii.	1 8	1 4	0 6	1 0	1 0	1 0
	iv.	... ...	... ...	... ...	0 8	0 8	0 12
IV.	i.	3 0	2 0	2 12	1 8	2 5	2 0
	ii.	2 4	1 8	1 12	1 0	1 10	1 0
	iii.	1 0	1 0	0 10	0 8	0 12	0 12
V.	i.	2 4	1 8	1 4	1 0	1 8	... ...
	ii.	1 12	1 0	0 14	0 8	1 0	1 0
	iii.	1 0	0 10	0 6	0 4	0 9	0 12
VI.	i.	2 0	1 4	0 14	1 0	1 4	... ...
	ii.	1 0	0 12	0 10	0 12	0 12	... ...
VII.	i.	1 0	1 4	1 12	0 12	1 3	1 0
	ii.	0 8	0 12	0 14	0 8	0 10	0 8
VIII.	i.	0 12	0 8	0 14	0 8	0 10	1 0
	ii.	0 6	0 4	0 6	0 4	0 5	0 8

Nellore,
7th December 1866.

(Signed) J. W. B. DYKES,
Collector.

Enclosure No. 3.

Abstract.—Copy of a Report to Government on the system pursued as regards Survey and Settlement in Bombay, and other parts of the Empire.

Rev. Pros: 31st October /67 No 602..

[illegible]

Memo. for Board:-

a Bd. Rev: No. 5291.

d/1553. of 24 & 26 Aug/67.

In the G.O. of 12 Dec/64 para 6. the Govt. decided that the Collr. shd. take in hand the re-assesst. of the [illegible] Dt. instead of its being entrusted to the Settlement Dept. and the result now is that Mr. Dykes's proposals for the first Taluk completed (Atmakur) are such ~~that the~~ Bd. are compelled to recommend ~~that~~ great part of the work be done over again & ~~that his~~ revision & the completion of the settlement of the District ~~be entrusted~~ to Mr. Master, the special establishment in Nellore being placed under his orders.

I have gone carefully thro' the papers & [illegible] relating to the [illegible] enclosure.

I was never sanguine of the new plan succeeding unless in very special cases such as formerly under Mr. Puckle as of old one of the most experienced officers of our Settlement depart.t — & knowing Mr. Dykes's somewhat crotchetty turn of mind; I anticipated difficulty in working the Govt. plan. He is most laboriously zealous - greatly interested in his work. anxious to promote the welfare of his District. and to the best of his light to advance liberal measures - but he is addicted to theorising & generalising from insufficient data - & if facts oppose his conclusions: 'tant pis pour les faits'. The result is that in detail his administration is occasionally hard on individuals. & his schemes sometimes won't work. He is somewhat opinionated & a breakdown in practice is I fancy about the only argument that will convince him he has been wrong. In the present case he has evidently as the Bd. say started with a bias wh. has led him to deviate from his instructions -

The Govt. distinctly says that the classification of soils was to be according to the usual division into Clay, loam &c with as many subordinate classes in each division as might be rendered necessary by material differences of fertility. But Mr. Dykes instead of this, adopted an arbitrary scale of produce classifn. - & brought the individual fields into this scale by some process wh. is not clearly comprehensible. But wh. has unquestionably resulted in utter failure - so much so that he himself is compelled to abandon his detailed calculations & to propose a discretionary scale of money rates - wh. he confesses will have the effect of taxing the poorest classes of lands according to his valuations

50 per cent in excess of the
proportion laid down by Govt.
of half the net produce.
and will be lightest (or
merely light) for the most
valuable lands. The excessive
number of anomalies pointed
out by the Bd. in the comparatively
few cases of wh. the details
are given in the Bd's report
preclude any hope of being
able to adjust matters
without a reclassification
wh. however fortunately it
is estimated will not take
more than 8 months.

It wd. be useless for me
to analyse in detail Mr. Dykes
work but I wish briefly to indicate
its main features.
His first instructions to his subordinates contained
the following fatal rule.
'Soil is not worth while to recognise
a grain value under 2 Tooms the acre
and it is not wise to attempt to decide
what will be the average crop for a
term of years on an acre of land
within that quantity, the lowest class
of productive power to be dealt
with by the Classifiers will be all
soils &c. yielding on the acre according
to the present average standard
of cultivation less than an English
Quarter - or 2 Tooms according to
local measures. and
these soils &c will be each
and invariably rated at
2 Tooms or 4 Bushels
the acre ...

In other words Mr.
Dykes declined to recognise
the fact that any land
yielded ordinarily
less than 4 Bushels
an acre. another is
proved to detail the result
of actual experiments
showing however in these
successive & limited number
numerous instances
occurred of a smaller
out turn ...

Hereupon he justifies his
assumption of the produce
rate for his classifiers
on the ground that "it wd.
have been difficult
to believe that grain which
15 years ago was selling
at 15.0. the ton - or 9 pence
the bushel, and was
selling last week in
Kelloor bazaar for 8.0.0.
the ton or 4 shillings the
bushel." thus by a
singular confusion

of ideas: upholding an overestimate of produce on the ground that prices have risen –

His ultimate scale was

Individual : ?
per acre

Dorns	= Bushels
2	4
3	6
5	10
7	14
10	20

But how he brought his fields into these classes it is impossible to understand. W. Brook says "Each field is first examined by a Classifier as to the nature of the soil, pronounced to be 2 Dorn 4 Dorn – 8 Dorn land &c.

Afterwards actual 'kyles' are made in the different classes of land for the purpose of testing the accuracy of the Classifier's estimate." But it is evident that this subsequent test would not suffice to correct errors. E.g. the Classifier goes over 50 fields aggregating 50 acres of different qualities of soil of which it returns 7 to varieties including main & minor subdivisions

are recognised in the 2nd and the places & records 20 of these as 6 Dorn land – & 20 as 4 Dorn land. Subsequently 6 'kyles' are made in these fields aggregating 2 acres (as each kyle was ordered to be a quarter acre at least) actually taken – the same number of 'kyles' would probably be larger for the supposed number of fields – but would certainly not suffice to determine the productive value of the soil of each quality included in the Classifier's tables spread over considerable area – Still less would afford any criterion to the 'kyles' were made not in the fields actually classed but in perhaps other villages or lands estimated to have the same productive value.

To determine in

which class of soil a field sh.d
be placed is a comparatively
easy matter — thus by a series
of tests in different parts
of a Taluk a fair average
produce value might be assigned
to a class of soil — but it is
impossible to check a classif.n
based on a mere estimate
of the produce value of a field —
& indeed it is impossible to
classify fairly on such a
system. I need scarcely say
that classif.n is the turning
point of the whole operation of assess.t
including as it does the
valuing of each class of soil
& the classing of each field
according to the series.

At paras 18 & 19 the Rd
cites several instances of
utterly anomalous results
obtained by Mr Dykes' process
evidencing the valueless
character of the whole,
especially when combined
with his arbitrary scale
of produce value.

The results are as might be
expected a most extraordinary
jumble from this method

of which that no land
shall yield less than a
certain quantity; &
then shall be only 5 grades
of produce value: —
2 then that the produce
value of a field shall
be determined by the sys.
— lastly that the correctness
or otherwise of the produce
value assigned to each
class shall be determined
by the average result of
testing a limited
number of classed
fields. Another serious
defect in Mr Dykes' system
is that in fact he taxes
the enterprise & industry
of the owner, for the more
highly manured & carefully
cultd. field will necessarily
on inspection acquire a
higher productive value
than the mere quality of
the soil wd. warrant.

Mr Dykes instructed
his subordinates to give
their attention mainly
to testing the productive
power of un-irrigated
land & consequently for

but cultn. whereas no reliable
data — the proposes to add
a uniform water rate to
the average rate for dry cultn.
without respect to the source of
irrigation, whether a petty tank
dependent on surface drainage
or river channels under an
anicut —

On the whole I think the Govt.
can come to no other conclusion
than that arrived at by the Bd.
that no correct classifn. of the
soils or reasonable estimate
of their actual or relative value
has been obtained —

As regards the proposed
Commutation rates the Bd.
do not reject Mr. Dykes proposals
deduced from the taluk averages
for a long series of years —
but they observe — and I think
with great reason — that the
enquiry shd. include the whole
Dt. & that one rate shd. be adopted
for the whole or at least for
large sections of the District.

I think there can be no question
as to the propriety of this conclusion —
It wd. never do to have varying
Commutation rates for
different taluks in close
proximity to each other —
& I do not suppose that
the G.O. of 12. Oct/60 contem-
plated such a result.

It is therein laid down
that the Commutn. rates
should be fixed on the
market prices for a
series of years of the
chief grain markets
with an allowance for
cost of conveyance to them but
it does not appear that
any attempt has been
made to carry out these
instructions in regard to
Atmakur.

Much attention has
been given to the estimate
of cultivn. expenses but
they come out so much
lower than those determined
~~for~~ by the Settlement dept.
in other Districts that
the Bd. hesitate to accept
them —

The proposed allowance
for fallows & risks
of season ranges from

33⅓ to per cent of the gross produce & the Bd. consider that it may be accepted –

The result however of the Settlt. of Mr. Dykes process – in consequence no doubt of the defective way of estimating his produce values for classifn. – is that the net produce comes out so small that Mr. D. is driven to propose to throw aside in great measure all his detail calculations & to adopt an arbitrary scale of money rates. & this proposal – as the Bd. very properly remark is utterly inadmissible. More especially as the result on his own showing wd. be to raise the rates in the poorest & least profitable soils & to place a relatively unduly light assesst. on the superior lands.

Mr. Boswell has expressed a very decided opinion adverse to Mr. Dykes's scheme. & Mr. Rundall the Special Assist. for settlt. purposes – plainly intimates his disapproval of it: & points out several particulars in wh. it is defective. He is clearly of opinion that generally the higher classes of soil have been undervalued & that valuation does not go sufficiently low for the poorest soils – Ultimately he is able to point out a way of re-classifying the lands at a comparatively small cost of time & money.

I am [illegible] to adopt the Bd.'s recommendn. that the settlement of the Dt. be transferred to Mr. Master – & that Mr. Rundall & the special establishment be placed under his orders.

The Bd. also suggest ~~that~~ in view of the difficulties that seem in the way under the plan proposed in para. 60 of Bds. ltr. it may be better to attach one or two officers to Mr. Master's deptt. so that he may be able to take up & direct the duty of

For orders.

We cannot I think avoid going back to the original system & do as the Bd. propose – that is, make over the work to Mr. R. Master, undoing what has been so badly & arbitrarily done by Mr. Dykes. – According to Mr. Rundall this will be a matter of 8 months work.

This suggestion of the Bd. is a very proper one & should be acted on or we shall have a recurrence of the Dykes "imbroglio" in other districts.

raising the assesst. of
this District cannot be
undertaken by the Govt. –
The State of the Surveys
since under this measure
is absolutely necessary: but
it is not needed immediately
in regard to Nellore. Govt.
has sanctd. to the Special
Estabt. already these will
suffice.

In conclusion I trust
the Govt. will authorize me
to record their decided disapproval
of Mr. Boswell's views in
favor of high assessments
so as to exclude from the
position of Landholders
all except "men of substance
with large holdings" & abundant
capital at command.

Mr. Boswell knows very
little about Ryotwari Districts
Evidently has never seen it
working under ordinarily favorable
circumstances: & I believe that
his arguments agst. small
holdings are opposed to all
experience. But it may

Yes – but the new Survey
may be at once attached to the
Settlement branch of the Survey &
thus pick up a knowledge of
their new duties. I would
make the appointts. at once.

I think it well to put
before Mr Boswell the facts
which prove his theory to be
weak & erroneous. but I
donot consider that any
censure of remark is necessary.
JP

I quite agree with [illegible]
[illegible] Mr. Phillips
Mr Boswell's remarks
dont call for any
elaborate refutation but
all and I would
not identify the
opinion of Govt. with the
theory of low assessments.
There is a foundation of
truth in Mr Boswell's
opinion: his results do

produce unsubstantial tenants and unsubstantial tenants are beggared by the first bad season but Mr. Boswell overstates his opinion & states it too dogmatically. There are countervailing advantages attached to small holdings & low rents, they open an avenue to humble industry & satisfy a natural craving of the human mind for independent labour, for property. We ought to try to repress the expression of individual opinions among Revenue officers by affixing to particular dogmas the authority of Govt. There is no Pope here & if there was one he would doubt at present he found at the side of permanent settlement or very low rents. N.

sufficient point it that this view involves the negation of all the rights of Ryots. Rts in my opinion are just as sacred & imperative as those of Govt. — and he assumes for the Govt. a right to deal with all the land as a private & absolute landlord. Rts I can never admit belongs to them..

Small farms and small or as W. B. calls them pauper holdings being a necessary or usual concomitant of light assessment on the land. the very opposite is the result. When fairly & lightly assessed the land acquires a value. Rts rapidly induce the growth of considerable holdings in the hands of substantial Ryots. as seen in Tanjore - Malabar & Canara - nothing so decidedly tends to grind down our Ryots into paupers as the excessive assessments

Revenue Departt

No. 2566

Proceedings of the Madras Government under date the 31st Octr 1867.

Read the following Pro: of the Board of Revenue.

Reviewing report of Collr of Nellore on the revision of the Settlement in Atmakur Talook.

(Here enter 24th Augt 1867, No 5491)

Recommending to Govt that the Settlement of the Nellore district be completed under the orders of the Director of Revenue Settlement, and that Mr Rundall and his Estabt be placed under his directions for the purpose, approving of Asst Collr's proceedings in regard to classification of lands, and stating that Board will pass separate orders on the subject of the Cullary tax.

(Here enter 26th Augt 1867, No 5503)

The Govt have given careful consideration to the Board's Pro wh: formerly so generally prevailed but wh: happily are now fast becoming mere matters [illegible] of tradition in most parts of the country. The condition of this Dist & the progressive revenue of late years give the most direct contradiction to W. B.'s arguments.

The 'maudlin philanthropy' wh: would reduce assessts. below "what is actually fair & just" exists only in his own imagination. That rates which have past usage in their favor are therefore to be approved & maintained is an assertion wh: in the unqualified way in wh: he makes it, only shows that he is very imperfectly acquainted with his subject.

L.R.

I agree generally with the resolution of the Board of Revenue.

N.

I have to apologise for keeping these papers an unduly long period. I did so with a desire to comprehend thoroughly Mr Dykes' report but I must confess that I have not been able to comprehend it satisfactorily.

13 Sept 64.

A reference to my minute of the 4 Nov. 1862 p. 3-7 (recorded in Procds of Govt 12 Dec 62 No 2243) will show that I was quite opposed to the assessment of the Salem District being entrusted to the Collector Mr Dykes and urged its being committed to the Officers of the Settlement Dept. The papers now submitted amply [illegible] justify the opinion wh: I then ex-

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W-2566

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The Govt have given careful consideration to the Board's Pro-

and the papers submitted by them and have come to the conclusion that there is no alternative but to adopt the Board's suggestion and transfer the revision of the settlement of the Nellore District to Mr. Master - placing Mr. Rundall and the special Establishment now employed in that district for settlement purposes under his orders

orders -

This will accordingly be done -

The Govt. recognize the amount of care and labor which Mr. Dykes has evidently bestowed on the work - but on his own showing it is plain that no correct classification of the soils or reasonable estimate of their actual or relative value has been arrived at - and consequently that his conclusions are in[illegible]red.

great part valueless. It is much to be regretted that his deviations from his instructions and disregard of the experience gained by the special settlements department should have led to this unfortunate result but the Govt trust that the loss of time may not prove serious.

Much of the data that have been collected will be of use to the master but he will of course test them before relying on them as a basis for his proposals and for the Classification of the soils he will adopt the system which has been approved by Govt and hitherto adopted in the District of which the assessment has been revised.

The Govt entirely concur in opinion with the Board that the commutation rate should be deduced from Price lists for the whole District and not for one taluk only. In the Govt order of 12th Decr 1864 it was laid down that the commutation rate should be fixed on the market prices for a series of

Years

years at the chief grain markets with an allowance for conveyance to them - but it does not appear that any attempt has been made to carry out these instructions in regard to Atmakur talook.

The allowance for Fallows and risks of season is certainly liberal in the extreme - but the Govt. do not desire to object to it, if Mr. Master finds it not more than necessary.

The cultivation expenses have come out so low that the Board hesitate to accept them - and these will need to be carefully scrutinised by Mr. Master to tested by comparison with [illegible] results obtained in other Districts.

The standard grains seem properly selected but the Govt. cannot accept the proposal to rate the wet lands as dry and to charge a uniform water rate without any reference to the nature of the source whence the irrigation is derived.

Mr. Dykes has evidently misapprehended the meaning of the technical phrase "unprofitable areas" and if, as is probable, these have not been excluded from survey, allowance must be made for them in drawing up the proposals for the Settlement.

It is however quite (~~useless~~ superfluous) for the Govt. (~~to attempt~~) to analyse Mr. Dykes' proposals in detail for ~~the~~ (~~palpably inaccurate nature of~~) his classification sible to arrive at any correct estimate of his other processes. the ultimate results being (~~absolutely~~) omit. N inadmissible —

The Government look to McMaster to reduce matters to shape and order with as little delay as possible - but they resolve to modify that portion of the order of December 1864, which required that proposals should be submitted taluk by taluk. It is evident that this limited area does not afford data sufficient ~~to~~ for testing proposals which shall apply to the whole or to a main

[illegible]
the Government are not
prepared to go thro' the whole
detail process for each taluk,
with perhaps minutely vary-
ing results in each - nor do
they see that any advant-
age will be secured by this
mode of procedure now that
the work is transfered to
the Settlement depart-
ment. They leave it
to Mr. Master to determine
whether one set of proposals
may be submitted for the
whole district or whether
special circumstances ren-
der it desirable to report
on portions of the district
separately.

The Government
will keep in view the
Board's suggestion that
one or two Officers be
re-attached

are restricted to the Settle-
ment department. But
it does not appear that
this will be immediately
necessary in consequence of
the present orders as
regards Nellore.

[The Government
share the Board's opinion
as to Mr. Boswell's views
in favor of high assess-
ments. "The maudlin
"philanthropy which dic-
"tates the reduction of
"assessments beyond what
"is actually fair and just"
is doubtless worthy of the reproba-
tion with which he would
treat it, but he appears
to misconceive the position
of Government in relation
to the Ryots, and to assume
for the former the
existence

With reference to what
passed in Council yesterday,
it may be well, I think, in lieu
of the other two following paras:
to say, that Mr Boswell, in his
letter of the 4 Jany last, has
broached opinions in regard
to rates of assessment wh. were
not necessary when reporting
on the operations of his predecessor,
and which do not at present
need notice by the Govt.:–
It is desirable that the
present orders should go out
of the Secretariat at an early
date to stay the progress of
what may still be doing
under Mr Dykes system

23 Oct.

I concur in what is
stated in the para-
but do not object to
its being modified
as proposed by my
colleague's prop.

in

I object entirely to any positive or negative statements by authority of the Govt. of this nature. It is not the least necessary to deny or affirm anything or to import the discussion of English terms which do not apply to India. The Govt. are not a body of political economists charged with the duty of defining the relative positions of the Sirkar & the Ryot. We will not bind ourselves by theoretic definitions which might entail practical difficulties and limitations hereafter. We are all agreed in opposing exception abstract [illegible] and I am not ready to affirm anything which would seem to [illegible] the rights of Govt. to the enhancement of the revenue [illegible]

existence of rights and responsibilities which do not belong or attach to them.—

The Govt. are not landlords nor are the ryots tenants — nor is it open to the former to enhance at pleasure their demand on the landholder. At most it can only be said that the Govt. and the Ryot have a kind of joint proprietary right in the produce of the land — the share of the Govt. being strictly limited by the same law and custom which sanction their demand and the results of the policy of late years which have tended to a moderate money assessment in com [illegible]

[illegible]
share do not [illegible]
that policy is injurious
to the State revenues
or to the advancement
of the country.—

To adopt a high
rate of assessment with
the express object of repressing
enterprise and
leaving the natural
outlet for the craving
after an independent
position and the acquisition
of real property,
does not commend itself
to Govt. as a judicious
line of policy—

?? Appy.

The Govt. do not
concur in the opinions
advanced by Mr. Boswell
in his letter of 4 May

[illegible] 1st paragraph
Simply remark
That Mr Boswell has
advanced opinions in his letter
of the 4th of May last regarding
rates of assessment and the
occupancy of land in which the
Govt. don't concur - but which
they don't think it necessary
to discuss as they are
not necessarily relevant
to a report on the
operations of Mr Sykes in
connection with the
land settlement of Nellore
N.

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that they
think it
necessary to
discuss those opinions
as they are not
necessarily relevant
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the Land
ment of Ellor
R.K.

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the Madras Govt

31 October 1807

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