

Revenue (1897) Department.

PRESS SERIES.

G.O., No. 291

DATED 3rd May 1897.

[Despatch Abstract.]

Training in Distillery work.

Approving, with remarks, the scheme for organising a school for the — of the Officers of the Salt, Akkari and Customs Department.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
					3468		26/

Revenue (1897) Department.

CURRENT No.



From the Secretary to the Commissioner,
Salt, alkali and Separate Revenue
Madras

His No. 1227

Dated 25th March 1897

Received 2nd April

Registered 2nd "

Enclosures

Spare copies

Order

SUBJECT.

Concurring with the views of Government with regard to the training of a suitable proportion of the officers of the Department in distillery work and submitting a scheme for organizing a school to impart instruction in distillery matters

BACK PAPERS.

G.O.	No.	Department.	Date.
Sp.	132	1-3-77	

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Syllabus

Part I Theoretical

I Elementary Chemistry

- Definitions, nomenclature, atomic and molecular weights.
- Carbon Compounds as far as they apply to Sugars, alcohol and the by-products of distillation
- Other Compounds being those required in the analysis of Sugars etc.
- Decimal weights and measures.
- Thermometric measurements.

II Mensuration of Solids.

- areas
- Capacity as applied to the gauging of vessels of various shapes.

III Technical distillation

- Materials used
- Fermentation: action of ferments upon
 - Saccharine Solutions. (ii) Malt worts.
- Distillation.
- Spirit and Spirit values.
- Saccharometers and Hydrometers.

This may perhaps be omitted with reference to new material.

IV Brewing:

- (a) Materials used
- (b) Washing, hopping, boiling and cooling.
- (c) Fermentation and attenuation.
- (d) Yeast and hurbful ferments.

The Board
states that
this may
be omitted
(para 2 of B.C.)
AK
3/4/97

V Excise Manual

as far as it relates to distillery and
warehousing of spirits

Part II Practical.

I Distillery

- (a) Distillery Course throughout with special reference to the fermentation and attenuation of the Wash, the outturn and quality of spirits produced and the bye products.
- (b) Revenue checks: where best applied and to what purpose.
- (c) accounts

II Chemistry

- (a) Analysis of Sugar including
 - (1) Inversion of Cane into grape Sugar.
 - (2) Determination of Sugar values.
- (b) Estimation of spirit values.
- (c) Blending and reducing of spirits.
- (d) Determination of the original gravity of Wash.

(e)

- (c) Celsecuration of the spirit strength.
- (f) Methy lated spirits.

III Microscope:-

yeast, ferments and Starches.

Apparatus required.

Chemical balance to weigh to .01 grains
when loaded with 1000 grains in each pan.

1 Set grain weights - 1000, 600, 300, 200, 100
60, 30, 20, 10
with Siders for beam 6, 3, 2, 1.
.6, .3, .2, .1.

1 Set grammme weights 100, 60, 30, 20, 10
6, 3, 2, 1
with Siders for ~~the~~ beam .6, .3, .2, .1
.06, .03, .02, .01

Microscope with A & B eye pieces.

$\frac{1}{8}$ " $\frac{1}{4}$ " & 1" powers

mounting and Covering glasses
1 doz 6 doz

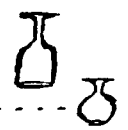
Thermometers, glass long for retorts 2

Retorts stoppered Quarts - 6
Galls 3

" stands for - - - - - 2

Stills, Glass - - - - - 6

" " Condensers 2
" " stands - - - - - 2

Glasses, Glass for Sugar reductions	do	12	
" " Plain	do	6	
" " Graduated	do	3	
" " " 100 "	do	2	
" " " 250 "	do	1	
" " " stoppered 1000 "	do	1	

Burettes to hold 50 ccs	do	2
" Erdmann's floats	do	2
" Stand for	do	2

Pipette 1 cc	do	2
" 5 ccs	do	2
" 25 ccs	do	2

Measures graduated, tall 100 ccs	do	1
" " 250 "	do	1
" " grains 500 "	do	1
" " 1000 "	do	1

Beakers tipped in nests	do	3
" " large 4 pts	do	2

Lamps Methy lated spirit large	do	2
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Funnels, Glass, of Sizes	do	3
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Tubing, glass, of Sizes	do	4 lbs
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Rod	do	2 "
-----	----	-----

Test Tubes of Sizes	do	3 doz
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" " Stand	do	1
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" " Brushes	do	1
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" " Squeezers	do	1
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Capsules Porcelain small	do	12 doz
--------------------------	----	--------

Basins of Sizes	do	6
-----------------	----	---

Pestle and mortar, Wedgewood small	do	1
------------------------------------	----	---

Stoppered bottles	do	
-------------------	----	--

Sizes, doz	4, 6, 8, 12, 16
do	6, 2, 2, 1, 1

Corks, India Rubber of Sizes, plain	do	
" honed 1 hole	do	18
" 2 holes	do	

Tubing, India Rubber of Sizes	do	12 yards
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" " Screw clips for	do	6
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Filter papers Common 2 Sizes	do	1 packet
" Sueded small	do	1 "

Litmus papers Blue and Red	do	1 box ea
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Hydrometer 1 glass 5 stem	do	
" 1 metal	do	

" Tubes for	do	2 no
-------------	----	------

A Copper vessel holding about 1 gallon of water for condensing purposes fitted with a spout for outlet.

A Cooling machine or in lieu thereof ice must be forwarded daily about 10 lbs.

A strong and firm folding table for

for demonstrations about 8' x 3' x 3'
 A set of Shelves, 4 in number 6' x 12"
 to be fitted into frames in upright side pieces.
 6' 0" x 12". frames 30", 42", 52" & 60"
 from bottom. 2 Screws in each frame
 and a thin backing made in 3 pieces
 also to screw on ^{each} to Shelf in 3 places.

List of Reagents required

	OZs
Acid acetic glacial —	2
" Hydrochloric Pure —	16
" Sulphuric —	16
" Carbolic —	4
" Nitric —	8
" Phosphoric —	4
" Tartaric ~~Acid~~ —	8
Ammonium chloride —	8
Argentum nitrate —	1
Boric chloride —	8
Borax pure ~~Acid~~ —	4
Cupric Sulphate pure —	8

Mercuric Bichloride —	1303s
Potassic Hydrate —	16
" Bicarbonate —	4
" Chromate —	4
" Bichromate —	4
" Bromide —	1
" Iodide —	1
" Permanganate —	8
" Nitrate pure —	8

Liquor Ammonium Fort. 16

Lead acetate pure 2

Iodic Hydrate — 16

" Bicarbonate pure — 16

" Hyposulphite — 8

Zinc Sulphate pure — 2

" metallic pure — 4

Animal charcoal — 7 lbs

Wood naphtha — 1/2 pint

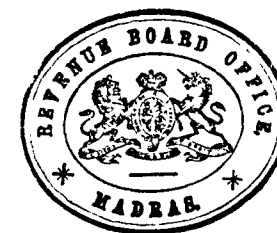
Methylated spirits — 10 gallons

(True Copy)

Cambridge

Assistant Secretary

12/1/37



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Proceedings of the Board of Revenue

(Separate Revenue),

Dated 25th March, 1897.

Ins. No. 1227.

Read Government Order Revenue
Department Press No 132 Revenue, dated
1st March 1897.

Read also the following letter from
the Deputy Commissioner of Alkari
No 17 dated 22nd March 1897:-

" My inspection of the distilleries
so far as I have already conducted
it having proved to me most
conclusively that not only does the
distillery system require remodelling
but

but also that before any degree of
efficiency in distillery Control can
be hoped for, a body of officials with
a thorough knowledge of distillery
practice must be obtained and the
same conclusion having simulta-
neously been arrived at by the Board,
and only the details of the Scheme
remaining to be worked out, I have
the honor to present for the Board's
consideration a syllabus of both
^{theoretical and} practical instruction which I
am prepared to carry out and
which I feel sure will furnish
the Service with a body of officials
Competent

Competent to take charge of Dis-
tilleries with credit to themselves and
benefit to the Revenue. I need
hardly say that in some minor
points I may find it necessary
to amend, abbreviate, ^{or} extend
the proposed Course of instruction:
the Syllabus may simply be accepted
as showing broadly the Subjects in
which I consider it necessary that
instruction should be given, in order
that when officers are brought into
contact with distillers or their
servants, they should be at no
loss

are as follows:—

1. Each class should consist of about 10 officers of various grades from Inspectors downwards and should include one of the Inspectors who is proposed to be put in charge of each division according to the Board's Scheme.
2. They should be held in the neighbourhood of a distillery so that the practical distillery instruction could be given concurrently with the theoretical instruction and practical demonstrations. By this means every point dealing with the practical work of the distillery could

loss to furnish reasons for their conclusions and should be able to meet them on a common ground.

I am ready to admit that it is somewhat difficult to obtain such knowledge in a short course of study. What I hope for is that my lectures and demonstrations may lead to some interest being taken in the subjects dealt with, and that at the very least a thoroughly practical body of officials will be placed at the disposal of the Board.

2. My proposals as to classes themselves

Could be explained and elucidated as it arose.

3. They should extend over a period of ^{about} two months, during which time

no leave should be granted to any

of the selected officials except on the most urgent private necessity,

but Sundays and official holidays should of course be kept.

4. That notes should be taken by the officers of all lectures attended and all instruction received and that these notes be handed in weekly for examination.

5. That power be given ^{H.P.} me to deal with any case of carelessness or

inattention summarily, and if

necessary to suspend an officer pending a report to the Board.

Any officer
suspected of
carelessness
or
inattention
should be
suspended
pending a
report to
the Board.

Any such report to be laid before the officer offending and to be accompanied by any explanation he may wish to make.

6. That at the end of the Course an examination be held, the results of which showing the names in order of merit shall be presented as a Confidential report to the Board.

3. A list of apparatus and reagents required accompanies this.

4. Arrangements will of course need to be made at each place at which classes are ^{to be} held for the housing of the officials and for a place ⁱⁿ at which lectures and demonstrations may be given.

5. I propose that the first class shall be held for the northern division at Vizagapatam and that it shall commence about the 1st May. For the Central Division I should choose Rani fetta distillery and ^{the}

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the class ^{there} should commence early in July. For the Southern Division I can as yet make no proposition not having visited any of the distilleries in that part of the Presidency. Probably it might suffice if the Rani fetta class was made to include all the officers selected other than those instructed at Vizagapatam.

6. The question of allowances to be granted to the officers will of course be dealt with by the Board. Each officer should be provided with an "Excise Manual" corrected up to date, which should become his private

~~franchise~~ property as long as he
remains in the Board's Service.

7. I must strongly impress upon the Board
my opinion that in order to keep a re-
serve of officials who are conversant
with distillery work, every new entrant
into the Service should be supplied
with an 'Excise Manual', placed
under the officer in charge of some
selected distillery and kept there
for two months or until he has sa-
tisfied both his instructor and the
Inspector in charge of the division
that he is capable of taking charge
of a distillery should he be called
upon

upon to do so. For the Extra ^{6.0} work
thrown upon the officer, the Board
might as is done in English dis-
tilleries make some payment to
him as a Compensation.

8. I would propose that the Inspector
placed in charge of Divisions
should be called by some distinctive
title, that which appears to me best
is 'Divisional Inspector'.

9. Finally it will afford me great
pleasure at the end of the Course of
instruction to amplify my lecture
notes and lay them before the Board. If
the experiment of the classes prove
a Success I would submit that
the

the notes be printed and Copies supplied to any officers who are likely at any time to be appointed to Distilleries and who have not themselves attended the classes. By this means at a very small cost I venture to believe that a present reserve of competent officers would be built up and that I should have the pleasure of knowing that my humble efforts to succeed had not been quite in vain.

Resolution

With reference to Government Order No 132 Revenue dated 18th March 1897, the Board beg to express its Complete Concurrence

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Concurrence with the views of Government with regard to the importance of training a suitable proportion of the officers of the Department in distillery work before doing much towards improving the distillery Establishments. It has discussed the question with the Akkari Deputy Commissioner and encloses a report on the ^{from him} Subject, with which it concurs generally.

2. The Course of instruction proposed by Mr Bennett may be accepted. He may possibly find it necessary to

to modify some of its details if he finds the lines on which he has drawn it up too technical but in this he should be allowed full discretion. The portion of the Course connected with brewing may perhaps be omitted.

3. It will be necessary that the class should assemble at some convenient station where there is a sufficient amount of accommodation^{available} and a good distillery close at hand so that practical can be combined with theoretical instructions. One very suitable site is Waltham where there is an excellent distillery

870
distillery and house room can be easily obtained for all attending the class.

The Board proposes that the first Course should be commenced there early in May and that the class should consist of one Inspector, five Assistant

Inspectors, and four Selected Sub-Inspectors. It will be an awkward

time of year to spare so many officers but the difficulty would be quite as great after the manufacturing season is over as the toddy sales will then be approaching and Circle officers will have to be constantly in camp to check combination, and see that adequate prices are realized.

The temporary Sifting Assistant Inspectors will be available to take the places of the officers relieved and with their help the Board will be able to make the necessary arrangements for filling vacancies. It begs to suggest that all officers of the grade of Inspectors and Assistant Inspectors detailed to the Walthair School should draw a Conveyance allowance of Rs 25 and that Sub Inspectors should similarly receive Rs 15 per mensem. The Distillery is about $2\frac{1}{2}$ miles from the town and from Walthair and they will be put to considerable expense in getting backwards and forwards to

to it. It proposes to rent a bungalow in Walthair for the alkali Deputy Commissioner, in which he can give his lectures and demonstrations and to put up rough shed of bamboos and palmyrah leaves alongside of the distillery for use during the practical part of the Course. The materials will afterwards be made use of at the adjoining Karassa factory for repairs to buildings and covering heaps.

4. Mr Bennett forwards a list of ^{the} chemical apparatus which he will require. The Board is making

making enquiries as to whether
any portions can be borrowed from
the chemical Examiner or purchased
locally. Mr Bennett will eventually
require a proper laboratory equipment
but this had better be imported direct
from England where it can be obtained
from the makers to the Inland Revenue
Department.

5 The remaining points referred
to by Government will be dealt
with in another communication
and a set of rules for the management
of the School will shortly be forwarded
for approval.
(True Copy and Extract)

Communicate

To the Secretary to Government, Revenue Department
Copy to Alkari Deputy Commissioner who is requested to submit
draft rules as far as possible on the lines of those in force in the police
School

Revenue (1897) Department.

CURRENT No. 3515

Order

Telegram
From

The Board of Revenue,
Syl. Rev.

No.

Dated 29th April 1897

Received "

Registered "

Enclosures

Spare copies

SUBJECT.

Requesting to pass early
orders on Board's Progs. No.
1227 Mis. d/25.3.97.

G.O.	No	Department.	Date.

G.O.	No.	Department.	Date.

From (Office)		To (Person)	
Words 30/12	Day 29	Hour 15	Minute 21
Official Instructions.		From (Person)	

Please find orders on
various merchandise number 12,27
in enclosure (to be paid 25¢
month of 1897 wish
make arrangements for school
at once I am

32 Word Form.

LN.	Sent to	LN.
Recd. from		
23-4-37		Telegraph Master.

The Home in this C-38

Dr. J. L. L. L.



2304/97
21/5/97

C. Nos 2912 & 3515-797

~~Read also the following telegram to the
P. W. Council (Ref: Recd) 1.5.97.
For owners:- (W. E. Telegram)~~

In June 27 9.0. No 132 of 1-3-97 the Government observed that when Mr Bennett had inspected so many distilleries as the Board considered necessary and had fully acquainted himself with the general conditions, distilling schools should be organized for such Inspectors, Asst Inspectors, and Sub Inspectors well advanced for promotion to Assistant Inspectors, as in the B.D. opinion might be best suited to distilling instruction and likely to profit by it. The Govt also states that the instruction should be both theoretical & practical and that the former should be given at Madras or any other suitable place where suitable buildings were available, while practical instruction should be given in a distillery adapted for the purpose.

2. The Board submits with the current read alone a report received from Mr Bennett on the subject with which it generally concurs.

Mr. Bennett is of opinion that practical distilling instructions should be given concurrently with theoretical instruction. The Board gave in this view of the matter and considers that the first course should begin at Waltair where there is an excellent distilling and where house rooms can be easily obtained for all attending the class. The Board would begin the course early in May and considers that the class should consist of

one Inspector
five Asst. Inspectors and
four Selected Sub Inspectors.

4. The B. states that it will be an awkward time of the year to open so many hands, but in view of the difficulties that will be experienced after the manufacturing season owing to the toddy sales that will then commence the Board proposal may be approved. The Board proposes to carry on the work of these officers by utilizing the services of the temporary sifting Asst. Inspectors which will be available.

5. The Board proposes to paint a

The B. can make acting
appt. to fill the vacancies
caused by dep. to the school
B.S.

This conveyance allowance & require the sanction of India, I take it. Better give deputation allowance of $\frac{1}{5}$ of salary. Since the I.D.S. selected will be 1st grade men - $\frac{1}{5}$ salary will therefore be Rs 14 p.m. or practically the same as the I.D. proposes in this case, only Insp. & A.D.S. may get a shade more savings to India will be avoided. If however I am wrong in thinking that a temporary conveyance allowance need India's sanction, simply sanction the B.S. proposals.

⊕ It is probable, the men selected are already ap. as A.D.S., the $\frac{1}{5}$ salary & give them a little more than the B.S. proposes.

I don't think we can allow this in the case of Insp. - because in the case of A.D.S. or S.D.S., but the likelihood that the B. Com. will require any such large powers is so small that I think I had better say no - He will of course have the ordinary powers of a D.C. (deputation) or - Insp. (deputation) over all the officers under him.

a conveyance allowance of Rs 25 to each Inspector and Assistant Inspector detailed to the school and Rs 15 to the Sub Inspectors in view of the fact that these Officers will be put to considerable expense as the distillery is $2\frac{1}{2}$ miles from the town. In view as to whether this proposal may be approved - 6. The proposals of Mr. Bennett as to the classes are as follows:-

(i) The training should extend over a period of two months during which time the selected officers should have no leave except on urgent private necessity and except on Sundays and office holidays.

(ii) The Officers should take down all lectures delivered and hand them over for examination every week.

(iii) That power be given to the Deputy Commissioners for dealing with cases of carelessness or inattention the power extending to the suspension of Officers subject to report.

(iv) That an examination be held at the end of the course and the results thereof reported to the Board confidentially.

(v)

(v) That at the end of the course the lectures be amplified and read before the Board;

6. A syllabus of both theoretical and practical instruction is proposed by the Dy Commr. is appended to the B.O. The Board remarks that Mr Bennett may find it necessary to modify some of its details and that in this he must be given full discretion.

7. Submitted that the Board's proposals may be approved. The following draft order is submitted for approval:—

The Board's proposals are approved subject to the limitation that the power of suspending Inspectors and Asst. Insps. should not be exercised by the Asst. Deputy Commr. He may however, keep them out of the class pending a report to the Board. The following telegram will be despatched to the B.O. :—

distilling
Scheme for organising school to impart instruction in distilling *generally* *approved*
3/7/97 detailed order follows.

Note. This paper got mixed up with others in transit from Madras to B.O.

X/

BS

Identical this - It is to be a large school
BS

x Board of distilling has passed...

This must be modified as stated above. In drafting, please make it clear that all details are left to B.O. - also say that an indent for the apparatus &c which shd be provided for should be prepared at once. Means of procuring subsequently supplemented as necessary. The tent camp as connected, urgent.
BS

Print des mss. at once
2/5/97

Sep. Rev. No 28
15/10

C. Nos 2912 and 2915
Also the following telegram to the B.O. of Rev. (Sep. Rev. No 1-5-97)
G.O. No 2912 of 3 May 1897

With the first of the papers read above, the Board of Revenue (Sep. Rev.) submits a scheme for organizing a school to impart instruction in distilling matters. The scheme is generally approved subject to the following remarks and the Board of Revenue will be authorized to work out all details in connection therewith:—

(1) The officers proposed to be sent to the school for training should be considered to be on deputation under Articles 95 and 98 of the C. S. R. and may draw an allowance of one-fifth of their salary. Under this arrangement the Board of Revenue can make the necessary acting appointments to fill the vacancies so caused. A list of the officers selected for training should be

to this.
 he submitted to Govt for sanction
~~being~~ accorded under the Articles
 of the C. S. R. quoted above.
 (ii) The Govt considers that
 it is unnecessary that Mr.
 Bennett should have the
 summary powers he asks
 for in para 2 (5) of his
 letter. He will of course
 exercise the ordinary powers
 of a Deputy Commissioner
 over all the officers under
 him.

(iii) An indent for the
 apparatus &c which should
 be procured from Europe
 should be prepared and
 submitted to Govt at a
 very early date.

3/5/89.

to
 The Board of Revenue (Dep. Commr)
 The Secy to Govt.
 No. 5-5-77
 50
 3

Sanction of India is necessary for
 the part of the commercial alliance
 under Art 1181 of the C. S. R.

Government (1897) of Madras. REVENUE.

Recd.	} 1897.	Enclosures
Regd.		Spare copies

G.O., No. 291, 3rd May 1897.

MAY.



Training in Distillery work.

Approving, with remarks, the scheme for organising a school for the — of the officers of
 the Salt, Abkari and Customs Department.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following Proceedings of the Board of Revenue (Separate Revenue), Mis. No. 1227, dated 25th March 1897 :—

Read—G.O., No. 132, Revenue, dated 1st March 1897.

Read—also the following letter from the Deputy Commissioner of Abkari, No. 17, dated 22nd March 1897 :—

My inspection of the distilleries so far as I have already conducted it having proved to me most conclusively that not only does the distillery system require remodelling but also that before any degree of efficiency in distillery control can be hoped for, a body of officials with a thorough knowledge of distillery practice must be obtained and the same conclusion having simultaneously been arrived at by the Board, and only the details of the scheme remaining to be worked out, I have the honour to present for the Board's consideration a syllabus of both theoretical and practical instruction, which I am prepared to carry out, and which I feel sure will furnish the service with a body of officials competent to take charge of distilleries with credit to themselves and benefit to the revenue. I need hardly say that in some minor points I may find it necessary to amend, abbreviate or extend the proposed course of instruction; the syllabus may simply be accepted as showing broadly the subjects in which I consider it necessary that instruction should be given, in order that when officers are brought into contact with distillers or their servants, they should be at no loss to furnish reasons for their conclusions and should be able to meet them on a common ground. I am ready to admit that it is somewhat difficult to obtain such knowledge in a short course of study. What I hope for is that my lectures and demonstrations may lead to some interest being taken in the subjects dealt with, and that at the very least a thoroughly practical body of officials will be placed at the disposal of the Board.

2. My proposals as to classes themselves are as follows :—

(1) Each class should consist of about ten officers of various grades from inspectors downwards and should include one of the Inspectors who is proposed to be put in charge of each division according to the Board's scheme.

(2) They should be held in the neighbourhood of a distillery so that the practical distillery instruction could be given concurrently with the theoretical instruction and practical demonstrations. By this means every point dealing with the practical work of the distillery could be explained and elucidated as it arose.

(3) They should extend over a period of about two months, during which time no leave should be granted to any of the selected officials except on the most urgent private necessity, but Sundays and official holidays should of course be kept.

(4) That notes should be taken by the officers of all lectures attended and all instruction received and that these notes be handed in weekly for examination.

(5) That power be given me to deal with any case of carelessness or inattention summarily, and if necessary to suspend an officer pending a report to the Board. Any such report to be laid before the officer offending and to be accompanied by any explanation he may wish to make.

(6) That at the end of the course an examination be held, the results of which showing the names in order of merit shall be presented as a confidential report to the Board.

3. A list of apparatus and re-agents required accompanies this.

4. Arrangements will, of course, need to be made at each place at which classes are to be held for the housing of the officials and for a place in which lectures and demonstrations may be given.

5. I propose that the first class shall be held for the northern division at Vizagapatam and that it shall commence about the 1st May. For the central division I should choose Ránipéttai distillery and the class there should commence early in July. For the Southern division I can as yet make no proposition, not having visited any of the distilleries in that part of the Presidency. Probably it might suffice if the Ránipéttai class was made to include all the officers selected other than those instructed at Vizagapatam.

6. The question of allowances to be granted to the officers will of course be dealt with by the Board. Each officer should be provided with an "excise manual" corrected up to date, which should become his private property as long as he remains in the Board's service.

7. I must strongly impress upon the Board my opinion that in order to keep a reserve of officials who are conversant with distillery work, every new entrant into the service should be supplied with an "excise manual", placed under the officer in charge of some selected distillery and kept there for two months or until he has satisfied both his instructor and the Inspector in charge of the division that he is capable of taking charge of a distillery should he be called upon to do so. For the extra work thrown upon the officer, the Board might, as is done in English distilleries, make some payment to him as a compensation.

8. I would propose that the Inspector placed in charge of divisions should be called by some distinctive title, that which appears to me best is "Divisional Inspector."

9. Finally it will afford me great pleasure at the end of the course of instruction to amplify my lecture notes and lay them before the Board. If the experiment of the classes prove a success I would submit that the notes be printed and copies supplied to any officers who are likely at any time to be appointed to distilleries and who have not themselves attended the classes. By this means at a very small cost I venture to believe that a present reserve of competent officers would be built up and that I should have the pleasure of knowing that my humble efforts to succeed had not been quite in vain.

Resolution—Mis. No. 1227, dated 25th March 1897.

With reference to G.O., No. 132, Revenue, dated 1st March 1897, the Board begs to express its complete concurrence with the views of Government with regard to the importance of training a suitable proportion of the officers of the department in distillery work before doing much towards improving the distillery establishments. It has discussed the question with the Abkari Deputy Commissioner and encloses a report on the subject from him with which it concurs generally.

2. The course of instruction proposed by Mr. Bennett may be accepted. He may possibly find it necessary to modify some of its details if he finds the lines on which he has drawn it up too technical, but in this he should be allowed full discretion. The portion of the course connected with brewing may perhaps be omitted.

3. It will be necessary that the class should assemble at some convenient station where there is a sufficient amount of accommodation available and a good distillery close at hand so that practical can be combined with theoretical instructions. One very suitable site is Waltair where there is an excellent distillery and house room can be easily obtained for all attending the class. The Board proposes that the first course should be commenced there early in May and that the class should consist of one Inspector, five Assistant Inspectors, and four selected Sub-Inspectors. It will be an awkward time of year to spare so many officers, but the difficulty would be quite as

great after the manufacturing season is over as the toddy sales will then be approaching and circle officers will have to be constantly in camp to check combinations and see that adequate prices are realized.

The temporary sifting Assistant Inspectors will be available to take the places of the officers relieved and with their help the Board will be able to make the necessary arrangements for filling vacancies. It begs to suggest that all officers of the grade of Inspectors and Assistant Inspectors detailed to the Waltair school should draw a conveyance allowance of Rs. 25 and that Sub-Inspectors should similarly receive Rs. 15 per mensem. The distillery is about $2\frac{1}{2}$ miles from the town and from Waltair and they will be put to considerable expense in getting backwards and forwards to it. It proposes to rent a bungalow in Waltair for the Abkari Deputy Commissioner, in which he can give his lectures and demonstrations and to put up rough shed of bamboos and palmyrah leaves alongside of the distillery for use during the practical part of the course. The materials will afterwards be made use of at the adjoining Karassa factory for repairs to buildings and covering heaps.

4. Mr. Bennett forwards a list of the chemical apparatus required for the course. The Board is making enquiries as to the cost of the apparatus.

4. Mr. Bennett forwards a list of the chemical apparatus which he will require. The Board is making enquiries as to whether any portion can be borrowed from the Chemical Examiner or purchased locally. Mr. Bennett will eventually require a proper laboratory equipment, but this had better be imported direct from England, where it can be obtained from the makers to the Inland Revenue Department.

5. The remaining points referred to by Government will be dealt with in a separate communication and a set of rules for the management of the laboratory will be forwarded for approval.

5. The remaining points referred to by Government will be dealt with in another communication and a set of rules for the management of the school will shortly be forwarded for approval.

(True Copy and Encl)

(True Copy and Extract.)

(Signed)

EDMUND MILLETT,
Assistant Secretary.

To the Secretary to Government, Revenue Department.
Copy to Abkari Deputy Commissioner who is requested
to submit draft rules as far as possible on the lines
of those in force in the police school.

APPENDIX.

SYLLABUS.

Part I—Theoretical.

I. Elementary Chemistry—

- (a) Definitions, nomenclature, atomic and molecular weights.
- (b) Carbon compounds, as far as they apply to sugars, alcohol and the bye-products of distillation.
- (c) Other compounds being those required in the analysis of sugars, &c.
- (d) Decimal weights and measures.
- (e) Thermometric measurements.

II. Mensuration of solids—

- (a) Areas.
(b) Capacity as applied to the gauging of vessels of various shapes.
- Technical distillation—
(a) Materials.

III. Technical distillation—

- (a) Materials used.
- (b) Fermentation :
 - Action of ferments upon—
 - (i) saccharine solutions.
 - (ii) malt worts.
- (c) Distillation.
- (d) Spirit and spirit values.
- (e) Saccharometers and Hydrometers.

IV. Brewing—

- (a) Materials used.
- (b) Washing, hopping, boiling and cooling.
- (c) Fermentation and attenuation.
- (d) Yeast and hurtful ferments.

V. Excise manual as far as it relates to distillery and warehousing of spirits.

Part II—Practical.

I. Distillery—

- Distillery—
- (a) Distillery course throughout with special reference to the fermentation and attenuation of the wash, the outturn and quality of spirits produced and the by-products.
 - (b) Revenue checks, where best applied and to what purport.
 - (c) Accounts.

II. Chemistry—

- Chemistry—
- (a) Analysis of sugar including—
 - (1) Conversion of cane into grape sugar.
 - (2) Determination of sugar values.
 - (b) Estimation of spirit values.
 - (c) Blending and reducing of spirits.
 - (d) Determination of the original gravity of wash.
 - (e) Obscuration of the spirit strength.
 - (f) Methylated spirits.

III. Microscope—yeast, ferments and starch.

Apparatus required.

Chemical balance to weigh to .01 grain when loaded with 1,000 grains in each pan—				1,000	600	300	200	100
One set grain weights	...	...	...	60	30	20	10	
With siders for beam	...	...	...	6	3	2	1	
One set Gramme weights	...	...	...	100	60	30	20	10
With siders for beam	...	...	...	6	3	2	1	
	...	...	...	06	03	02	01	

Microscope with A and B eye pieces—
 $\frac{1}{2}$ ", $\frac{1}{4}$ " and 1" power.
 Mounting and covering glasses—
 1 dozen. 6 dozens.

	1 dozen.	6 dozens.	No.	
Thermometers,	glass, long, for retorts	...	2	
Retorts stoppered,	quarts	...	6	
Do. do.	gallons	...	3	
Do. stands for	...	...	2	
Stills, glass	...	...	6	
Do. condensers	...	...	2	
Do. stands	...	...	2	
Flasks, glass for sugar reductions	...	...	12	
Do. plain	...	...	6	
Do. graduated	50 c. cs.	...	3	
Do. do.	100 "	...	2	
Do. do.	250 "	...	1	
Do. do.	stopped 1,000 c. cs.	...	1	
Burettes to hold	50 c. cs.	...	2	
Do. Erdmann's floats	...	...	2	
Do. stands for	...	...	2	
Pipetts 1 c. cs.	...	...	2	
Do. 5 "	...	...	2	
Do. 25 "	...	...	1	
Measures graduated, tall,	100 c. cs.	...	1	
Do. do.	tall, 250 "	...	1	
Do. do.	grains 500 c. cs.	...	1	
Do. do.	do. 1,000 c. cs.	...	3	
Beakers lipped in nests	...	...	2	
Do. do.	large 4 pts	...	2	
Lamps, methylated spirit, large	...	...	3	
Funnels, glass, of sizes	...	...	4 lbs.	
Tubing, glass, of sizes	...	...	2 "	
Rod do. do.	...	...	3 dozens.	
Test tubes, of sizes	...	...	1	
Do. stand	...	...	1	
Do. brushes	...	...	1	
Do. squeegees	...	...	1	

Capsules, porcelain, small	...	...	...	...	...	No.
Basins " of sizes	...	...	...	...	...	6
Pestle and mortar, wedgewood, small	...	...	...	...	...	6
Stoppered bottles—	...	...	...	...	...	1
Sizes	...	...	...	...	...	
Number	...	...	...	...	...	
Corks, India Rubber of sizes plain bored one hole	...	...	...	...	...	ozs. 4, 6, 8, 12, 16
Do. do. do. two holes	...	...	...	...	...	6, 2, 2, 1, 1
Tubing, India Rubber, of sizes	...	...	...	...	...	18
Do. do. Screw clips for	...	...	...	...	...	12 Yards.
Filter papers, common, 2 sizes	...	...	...	...	...	6
Do. Sweedish, small	...	...	...	...	...	1 packet—Ed.
Litmus papers, blue and red	...	...	...	...	...	1
Hydrometer, 1 glass	...	...	...	...	...	1 box—Ed.
Do. 1 metal	...	...	...	...	...	5 stem
Do. tubes for No. 2	...	...	...	...	...	

A copper vessel holding about 1 gallon of water for condensing purposes, fitted with a spout for outlet.

A cooling machine or in lieu thereof ice must be forwarded daily about 14 lbs.

A strong and firm folding table for demonstrations about 8' x 3' x 3'. A set of shelves, 4 in number 6' x 12" to be fitted into grooves in upright side pieces; 6' x 12" grooves 30", 42" 52" and 60" from bottom, two screws in each groove and a thin backing made in three pieces also to screw on to each shelf in three places.

List of re-agents required.

Acid, acetic glacial	...	...	...	...	...	oz.
" hydrochloric, pure	...	...	...	...	...	2
" sulphuric	...	...	...	...	...	16
" carbolic	...	...	...	...	...	16
" nitric	...	...	...	...	...	4
" phosphoric	...	...	...	...	...	8
" tataric xals	...	...	...	...	...	4
Ammonium chloride	...	...	...	...	...	8
Argent nitrate	...	...	...	...	...	8
Boric chloride	...	...	...	...	...	1
Borax pure xals	...	...	...	...	...	8
Cupric sulphate, pure	...	...	...	...	...	4
Mercuric Bichloride	...	...	...	...	...	8
Potassic hydrate	...	...	...	...	...	1
" bicarbonate	...	...	...	...	...	16
" chromate	...	...	...	...	...	4
" bichromate	...	...	...	...	...	4
" bromide	...	...	...	...	...	4
" iodide	...	...	...	...	...	1
" permanganate	...	...	...	...	...	1
" nitrate, pure	...	...	...	...	...	8
Liquor ammonium fort	...	...	...	...	...	8
Lead acetate, pure	...	...	...	...	...	16
Sodic hydrate	...	...	...	...	...	2
" bicarbonate, pure	...	...	...	...	...	16
" hyposulphite	...	...	...	...	...	16
Zinc sulphate, pure	...	...	...	...	...	8
" metallic,	...	...	...	...	...	2
Animal charcoal	...	...	...	...	...	4
Wood, naphtha	...	...	...	...	...	7 lbs.
Methylated spirits	...	...	...	...	...	1 pint.
	...	...	...	...	...	10 gallons.

READ—telegram from the Board of Revenue (Separate Revenue), dated 29th April 1897.

ABSTRACT.—Requesting to pass early orders on Board's Proceedings, Mis. No. 1227, dated 25th March 1897.

READ—also the following telegram to the Board of Revenue (Separate Revenue), dated 1st May 1897—

"Scheme for organizing distillery school generally approved. Detailed orders follow."

ORDER—No. 291, Revenue, dated 3rd May 1897.

Separate Revenue No 28.

With the first of the papers read above, the Board of Revenue (Separate Revenue) submits a scheme for organi-

zing a school to impart instruction in distillery matters. The scheme is generally approved subject to the following remarks and the Board of Revenue will be authorized to work out all details in connection therewith:—

(i) The officers proposed to be sent to the school for training should be considered to be on deputation under articles 95 and 98 of the Civil Service Regulations and may draw an allowance of one-fifth of their salary. Under this arrangement the Board of Revenue can make the necessary acting appointments to fill the vacancies so caused. A list of the officers selected for training should be submitted to Government so that sanction may be accorded under the articles of the Civil Service Regulations quoted above.

(ii) The Government considers that it is unnecessary that Mr. Bennett should have the summary powers he asks for in paragraph 2 (5) of his letter. He will of course exercise the ordinary powers of a Deputy Commissioner over all the officers under him.

(iii) An indent for the apparatus, &c., which should be procured from Europe should be prepared and submitted to Government at a very early date.

(True Extract.)

(Signed) G. STOKES,
Ag. Secretary to Government.

To the Board of Revenue (Separate Revenue).
" the Accountant-General.

Exd. Shaik Karim.