Thesis.

on

"Koch's Treatment in Phthisis & Lupus."

by

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(With high commendation. 1884)
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Prof. Koch's treatment in Phthisis & Lupus.

Probably never before in the history of medicine has any communication aroused such interest as the one made by Prof. Robert Koch in November 1890 on "A Remedy for Tuberculosis".

At first, while one half of the profession were enthusiastic over the discovery of the great Koch, whose words they could not doubt, the other half were entirely sceptical of any benefit to be got from the new remedy.

Now, that one partly have had their first ardour damped, & the other have been convinced that at any rate a powerful agent has been discovered which unquestionably has a specific action on tubercular tissues, - all are in a mood to judge more calmly & fairly of the results of cases which are perhaps treated in a more leisurely & effective manner than at first. It is right that a discovery, for which so much is claimed, should be fairly & patiently tried & the results of our experience made known without fear or favour.

It seemed therefore, that it would not be useless to make a report of some of the cases which have been treated in the Sheffield General Infirmary & which I am

able to relate by the kind permission of Mr Porter, Mr Cocking & Mr Arthur Jackson under whose care the patients were.

The treatment was commenced in the Sheffield General Infirmary on March 5th 1891, as soon as the long expected fluid arrived from Mr Libbertz of Berlin, & is being continued at the present time.

The seven cases of phthisis were carefully selected according to Koch's recommendations regarding the cases most suitable for treatment.

None of them were advanced, though the physical signs were distinct in all but one, & all were in fairly good condition when the treatment was commenced.

Observations of temperature pulse & respiration were taken & recorded every three hours. The temperature was taken in the axilla & only with thermometers which had been certificated at Kew Observatory.

The sputum was measured every day & examined for bacilli once a week.

The weight, also, was recorded once a week.

These observations were commenced 3 or 4 days before the first injection for purposes of comparison afterwards.

At first, the patients were kept in bed

but after a week or two they were allowed to get up every afternoon, & later, they were allowed to go out on fine days.

The injections were made usually at 9. A.M. to allow the reactions which we expected to be over before night.

The place of injection in every case, was the back, & in only one or two instances was any local uneasiness produced.

Koch's syringe was, from the first, found to be clumsy & unmanageable, & all the injections were made with W. Overlach's syringe with an asbestos piston which could easily be sterilised.

The injections were made with all the antiseptic precautions recommended by Koch.

The initial dose in one case was half a milligramme, tubercular laryngitis being present, in another we began with two milligrammes, in all the rest with one milligramme.

The maximum dose arrived at was one decigramme. This, though frequently repeated in some cases, has not been exceeded.

In the following account of the cases physical signs are usually recorded in red ink & history & symptoms in black.

Abbreviations:- R.M = Respiratory murmur. V.F. = Vocal fremitus. V.R = Vocal resonance. T.B = Tubercle bacilli. S.G.I. = Sheff. Gen. Infirmary.

Robert Dickinson, aet 32. Sheffield.
Machine knife maker. Admitted Jan 21st 1891.

Complaining of cough, expectoration, shortness of breath general weakness & loss of flesh.

Illness began 18 months ago with cough & rapidly increasing weakness. He thinks he began by getting cold after sleeping in a damp bed.

Seven months ago he was admitted to the Sheffield General Infirmary, complaining of pain in the chest, night sweats & purulent expectoration, about a month before, he had spat blood for a week & had lost 2½ stones in weight since the beginning of his illness. He remained in the S.G.I. for a month & was discharged, much improved in health.

He went to Southport Convalescent Home for a month & then came back to work.

Four months later the cough began again & he began to get rapidly weaker & thinner.

He was re-admitted to the S.G.I. on Jan 21st '91.

Previous health very good. He had small pox in youth, but he has not had any other serious illness.

Family History: No history of phthisis in the family. Father died at the age of 45 of inflammation of the lungs after an illness of only 3 weeks.

[Dickinson, continued]

Mother died of dropsy.

Sister died of Rheumatic Fever.

Present State:- Tongue clean. Appetite fairly good. Digestion good. Bowels rather constipated. Since admission voice has got rather hoarse. No pain in throat now.

Physical Signs. (March 2nd '91)

Weight. 8 st 12 lb (used to weigh 11 st 6 lb)

Heart normal

Lungs:- Slight flattening beneath Right clavicle, slight loss of resonance. R.M. harsh. V.R. increased. R. 'supra' scap' region: R.M. slightly tubular. No râles heard.

Larynx:- swelling over both Arytenoids. No ulceration.

Sputum 5 oz in 24 hours. muco-purulent. no blood. Tubercle bacilli abundant.

Urine 1010. Neutral. No albumen. No sugar.

Finger ends clubbed. Nails arched.

[Dickinson, continued]

March 5th Q.A.M. T. INJECTION .0005 gm

3.P.M. Slight sickness

11.P.M. No reaction. Temp 99. Pulse 96. Resp 32.

6th Q. AM. II. INJECTION .001 gm.

11.P.M. No reaction, feels comfortable.

7th Q.A.M. III. INJECTION .002 gm.

11.P.M. No reaction.

8th Q.A.M. IV. INJECTION .003 gm.

Cough rather more troublesome.

9th Q.AM. V. INJECTION .005 gm.

No reaction.

10th Q.AM. VI. INJECTION .005 gm.

11.P.M. No change.

11th Q.A.M. VII. INJECTION .007 gm.

12th Q.A.M. VIII. INJECTION .008 gm

Sputum examined. T.B. numerous

Lungs. R. apex front marked flattening & diminished movement. Resonance as before R.M. bronchial. V.R. increased.

L. apex front. some want of resonance musical inspiratory rhonchus.

R. base behind, dull. R.M deficient V.R increased. Abundant fine râles (moist)

13th. Q.A.M. IX. INJECTION .01 gm

Q.P.M. Severe pain in back & legs. 100.4

11th Weight. 8 st 11¼. (Loss of ¾ lb)

[Dickinson, continued]

March 14th 10. A.M. X. INJECTION .012 grm

8. P.M. Slight haemoptysis. Muscular pains all over. Vomiting attack. Slight rigor. Headache Temp 100. Pulse 104. Resp 26.

- a distinct reaction.

15th 9. A.M. Did not sleep well last night on account of pains. No more sickness.

Feels well this morning & has had a good breakfast.

11. P.M. Comfortable to-night. Temp normal.

16th Comfortable

Abundant fine moist râles at R. base.

17th Comfortable. Slight haemoptysis in morning.

R. base moist râles still abundant.

L. base. R.M. normal.

18th Weight. 8 st 12 3/4 (gain of 3/4 lb).

19th 9. A.M. XI. INJECTION .015 grm.

1. P.M. Vomited after a fit of coughing.

11. P.M. General muscular pains. Chill at 4. P.M.

20th Physical signs at apices much the same.

There are no moist sounds at apices.

Slight rhonchus over back of L. apex but not in front where it was heard last week.

R. base behind. Resonance deficient. R.M. weak. V.R. rather increased. Abundant subcrepitant rales.

21st Feels better this morning. No pains

[Dickinson continued]

March 22nd 11.A.M. XII. INJECTION .014 grm.

Sputum examined. T.B. numerous.

23rd 11.A.M. Chills, Sickness. Pain in head & legs continued to 3.P.M.

24th Cough very troublesome during night. Not feeling well all day.

25th Physical signs much the same.

R. apex front. R.M. tubular. V.R. increased. No moist sounds over apices, front or back.

R base still abundant fine râles.

26th Sick last night. Slight shivers at 5.AM. Feels better at 11.A.M.

27th 8.P.M. Vomited a little after a fit of coughing. Night sweats severe, given

℞ Zinci Oxid gr IV.

Ext Belladon gr ¼. Ft pil. ĪI nocte.

29th Throat very sore, hoarseness rather worse. Copious sweating last night.

Not feeling quite so well. Vomited after cough

Sputum: a few T.B. found, some broken up.

30th Feels very bad this morning.

R base behind, abundant fine moist râles in lower half, râles are rather coarser than at last note.

In front - no râles. R.M. harsh & bronchial.

Y.P.M Sick after coughing. Cough is worse.

Chest very sore during night

[Dickinson continued]

April 1st Chest very sore now, especially on coughing. Vomited a little in evening after coughing. Appetite very poor. Weight 8st. 11½ lb.

2nd 11. A.M. Temp 102.6. Feels very chilly. Weight, which had increased from the commencement of the injections up to the time of their discontinuance, has decreased 2½ lb in the week since. Temperature on the whole higher without injections. Sputum has distinctly increased since injections were discontinued. Night sweats continue. No diarrhoea. Lungs: Physical signs much the same. Dulness & râles rather more marked at R' base.

April 3rd Chest painful at night. Patient says he thinks he has not been so well since injections were stopped.

4th **XIII. INJECTION .01 gm.**

4.15. P.M. Sick after coughing

8. P.M. Temp 102.8. Chest very sore.

5th Chest still very sore. Headache. Ordered Sinchus Scillae for cough at night. Sputum: T.B. very few found.

6th Cough rather more troublesome. Chest sore. Slight haemoptysis. Otherwise comfortable.

7th **XIV. INJECTION .01 gm.**

Sick at 2 & 8 P.M. after coughing. Pain in R' chest. Poultices ordered.

[Dickinson, continued]

April 8th More comfortable to night.

9th Feeling better.

10th **XV. INJECTION .01 gm.**

Slight haemoptysis in morning.

S.P.M. Temp 102.2. Pain at seat of injection.

Cough more troublesome.

11th Sick after coughing twice today.

12. Feeling better to-day. Allowed out for ¾ hour as the weather was very fine.

13th **XVI. INJECTION .015 gm.**

15th Diarrhoea this morning, has been coming on for a week

Given Mist Bismuthi Carb (gr XX) ter die.

16th Sick after coughing in evening.

Diarrhoea not so bad, a little blood in last stool.

19th Sick twice in evening. Cough rather worse.

19th Sputum. T.B. few, fairly distinct

20. Not so well. Has not been able to get up for two days. Diarrhoea better. Cough very bad & often causes sickness.

21. Pain in chest head & limbs.

Cough very troublesome. S.P.M. Temp 102.6

Given Mist Quinin Effervescent (gr V) ter die.

(see chart 4.) [During the last three days, the temperature has not fallen below normal. The patient appears to have a touch of the prevailing Influenza, along with other patients in the ward.]

[Dickinson, continued]

April 22nd Fairly good night. No sickness
11. P.M. Sick twice during the day.
Throat very sore. Ordered Linseed poultices.

23rd Slept fairly well last night.
Still pain in chest. Slight haemoptysis.

24th Throat still painful. Tonsils rather inflamed & enlarged. Otherwise rather better.

25. Feels better to day.

26th Very bad in evening.
Ordered Inhalations of Tr Benzoin Co
Poultices over throat. Brandy ℥iv per diem.

27th Slept well last night. Feels rather better.
Sick three times in afternoon & evening.

29th 3.30. P.M. Fainting attack whilst sitting up talking to visitors.

30th Feels & looks very ill this morning.
Wishes to go home "to die" as he says.

May 1st Pain in chest & cough troublesome.
Ordered Morphia linctus.
Lungs. Percussion note over R. apex dull as before. Distinct loss of resonance in Left sub-clavicular region.
R. apex front, R. M coarse, abundant fine moist rales. L. apex front, a few fine crepitations. Both apices dull behind. Tubular br. Bronchophony.
R. base dull, abundant fine rales all over. No bronchophony.

[Dickinson, continued]

May 3rd Feeling no better, cough & pain very bad.

Sputum. A few T.B. found.

4th Throat very sore. Poultices resumed.

10th No better. Cannot get up to be weighed, but he is rapidly losing flesh. Cough very bad & pain troublesome.

12th Percussion of chest dull as before.

Auscultation. R. apex. Moist râles more abundant & much larger than at last note.

L. apex abundant fine râles moist & dry

R. M. bronchial.

Posteriorly whispering bronchophony over both apices. R. M. bronchial. Rales abundant.

R. base abundant moist râles, rather coarse.

Whole R. back diminished resonance.

L. base a few dry râles.

May 13th Sputum examined. T.B. not very numerous but very distinctly beaded.

Discharged at own request.

Weight. 4 st. 8½ lb (8 st 12 on admission)

May 15th Visited at home. Looks much worse

No pain now. Cough much less.

Sleeps a great deal. (Euthanasia).

Very offensive odour.

May 19th Died at 5.A.M.

[Dickinson, continued]

Autopsy. May 19th 1891.

Larynx. The whole of the interior of the cavity, both above & below the vocal cords, was ulcerated, but especially on the R' side. The R' vocal cord being almost entirely destroyed.

This ulceration extended also down the Trachea as far as its bifurcation, affecting mostly the R' side all the way down.

A number of recent tubercles were also seen.

Pleura. There was considerable adhesion at the apex of the L' lung, but the base was almost entirely free.

On the R' side the adhesions were much more extensive. The apex & the back of the lung were firmly attached to the chest wall & the whole of the base was firmly adherent to the diaphragm.

In front both lungs were free.

On removing the R' lung a large abscess cavity was opened at the apex & about an ounce of pus evacuated

R' Lung: At the apex was a cavity about the size of a large plum, with ragged & irregular walls. The posterior wall of this cavity consisted only of the thickened visceral layer of the pleura &, as mentioned, was ruptured in the removal of the lung.

[Dickinson, Autopsy continued]

The middle third of the R. lung was thickly infiltrated with caseating tubercle. The lower third was almost of a liver consistence grey in colour, & barely floated in water.

L. Lung:- There was some consolidation in the supra-clavicular part of the lung, & down the anterior border, abutting on the pericardium, were ~~[illegible]~~ a number of discrete tubercles.

On section, a small cavity, about the size of a walnut, was found at the apex, with irregular & ragged walls.

The rest of the lung down to the base was healthy & crepitant.

Heart & Pericardium: Normal. No tubercles.

Peritoneum. No tuberculosis.

Intestine. No tubercular ulcers. Here & there was a patch slightly congested, but no ulceration & no tubercles seen on the serous surface.

Kidneys: Large, pale & firm (amyloid) Capsule stripped off easily.

Liver: Large, very firm & pale (amyloid).

Spleen: Somewhat enlarged, & soft.

Henry Thos. Shirley, aet 25. Barnsley.
Miner. Admitted. December 24th 1890

Complaining of cough, spit, loss of flesh & general weakness.

Began a year ago with cough, sore throat & spit. The sputum soon became purulent & on one occasion three months ago he spit a little blood.

He has got gradually thinner & weaker since his illness began & has lost about 1½ stones in weight.

Six months ago an abscess formed in the R' cheek from a carious upper molar, it discharged for two months but has stopped since the tooth has been extracted. Not quite healed yet.

No severe night sweats.

Appetite fair. Digestion good. Bowels regular.

Previous Health, good, though he has never been very strong. Three years ago had an attack of "Bronchitis" in the winter & was in bed two weeks but got all right again.

No other illness.

Family History: Father died of phthisis at 42, broke a bloodvessel, Mother died in childbirth. Several brothers & sisters died in infancy.

No other tubercular history.

[Shirley continued]

Physical examination. March 2nd 1891.

Height 5 ft 8 in. Weight 9 st 6 lb. (used to weigh. 10 st 12)

Finger ends bulbous, nails arched.

Sputum 1 or 2 oz in 24 hours. purulent, nummulated.

T.B. numerous. No blood now.

Heart sounds normal

Lungs: Some flattening beneath L. clavicle

Loss of resonance in front down to 2nd rib

Vocal resonance & fremitus increased

R.M. harsh & bronchial, inspiration jerky.

R. apex. No dulness, a few fine moist râles.

Urine = 1018, alk. No albumen, No sugar.

Deposit of phosphates.

[Shirley, continued]

March 5th. Q.A.M. I. INJECTION .001 gm.

11.P.M. No reaction. No complaint. Temp' normal.

6th Q.A.M. II. INJECTION .002 gm

11.P.M. No reaction.

7th Q.A.M. III. INJECTION .003 gm.

Q.P.M. Slight reaction.

Headache, nausea, faintness, no pain.

8th Very slight haemoptysis during last night.

Q.A.M. IV. INJECTION .005 gm.

Slight reaction. Headache, nausea, faintness

Pain in R'side began at 2.P.M & lasted

until 11.30. P.M.

9th Q.A.M. V. INJECTION .005 gm

No reaction.

10th Q.A.M. VI. INJECTION .005 gm

No reaction

11th Q.A.M. VII. INJECTION .007 gm

11.P.M. Pain in R' arm & legs.

Weight. 9st 5lb (loss of 1 lb)

Sputum a few T.B. found after long search,

Slightly increased in quantity, muco-purulent

12th Q.A.M. VIII INJECTION .008 gm.

11.P.M. No reaction.

13th Q.A.M. IX. INJECTION .01 gm

Q.P.M. No reaction.

14th Q.A.M. X. INJECTION .015 gm

Comfortable at night.

[Shirley, continued]

March 13th Lungs: Whole of L. chest, subresonant. Dulness most marked beneath L. clavicle. L. apex front, R.M. harsh, inspiration jerky. Vocal resonance increased. A few moist râles. Increased conduction of Heart sounds over upper L. lobe.

L. base behind, abundant fine moist râles.

R. apex front. Sub breathing, a few moist rales. No dulness.

March 15th XI. INJECTION .014 gms

11 P.M. Comfortable & asleep. Temp. normal.

" 16th XII INJECTION .02 gms.

" 18th XIII INJECTION .02 gms.

" 19th XIV INJECTION .025 gms

" 20th XV. INJECTION .024 gms.

There has been no remarkable change after the above injections. Patient has remained fairly comfortable, with no special complaints. Weight 9 st. 4¾ lb (losing)

Lungs: Apices much the same as last note except for the diminution of moist sounds. L. base behind. Resonance deficient, R.M. feeble. fine moist râles still abundant.

" 21st XVI. INJECTION .03 gms.

" 22nd Comfortable since last injection. Good night. Sputum quantity unaltered. Thick muco pus. A few T.B found, not well formed.

[Shirley, continued]

March 23rd XVII INJECTION .035 gms.

5.P.M. Headache, nausea. Temp. 101°.

24th XVIII INJECTION .04 gms.

Comfortable in evening.

25th Weight. 9 st 3¾ lb (losing)

24th In evening. chills & shiverings. No pain.

28th XIX. INJECTION .04 gms.

Pain in chest all day, especially on coughing.

29th Pain in chest still continues. Cough worse. Appetite not quite so good.

Lungs: Left apex front, dull down to 2nd rib. V.F increased. R.M. markedly bronchial & wavy. Very few râles.

Posteriorly, resonance deficient over whole of L' back. At L'base abundant fine moist râles. V.F. & VR increased there. R' apex supra-clavicular - occasional moist râles.

Sputum increased in quantity, thick muco pus. No. T.B found (in two specimens stained.)

30th XX. INJECTION .04 gms.

8.P.M. Temp. 102°. No complaint.

31st No injection. Feeling giddy & sick in morning. Comfortable at night.

April 1st XXI INJECTION .05 gms

8.P.M. Temp 102.4. Complaining of chills & flushes of heat & pain in chest.

Weight 9 st 1¼ lb (losing).

[Shirley, continued]

April 2nd & 3rd Complains still of chills & pain in chest.

4th **XXII. INJECTION .05 gms**

8.P.M. Feeling very tired. Pain under knees.

Lungs Signs much the same as at last note.

Very few moist sounds at apices.

L. base râles as at last note,

Sputum. Two or three T.B found,

rather ill defined & not beaded.

April 4th **XXIII INJECTION .05 gms**

11.P.M. Very tired. Chest sore.

" 8th Complaining of chills & flushes of heat as before.

Temp 102.8 at 8.P.M.

11th 8.P.M. Temp 102.2. Tightness of chest & shivering.

12th **XXIV. INJECTION .05 gms**

Comfortable. Allowed out ½ hour as the weather was fine & warm.

13th 8.P.M. Feeling shivery. Temp 102.6.

14th 11.A.M. Shivers all morning. Temp 101.8.

Easier in evening.

15th Weight 8 st 13¼ lb. (losing).

16th **XXV. INJECTION .05 gms**

Shivers all evening. 8.P.M. Temp 103°

20th Has not been so well in the last few days, Goes out when it is fine. She is steadily losing weight. His temperature on the whole is higher, he has frequent shivers & sweats at night. Feels very tired at night.

[Shirley, continued.]

April 19th Sputum. Very few T.B found.

25th Continues about the same, with rather more pain in chest. Goes out every fine day.

Lungs: Signs exactly the same as noted on March 29th

Moist râles at L' base abundant as ever.

29th For last few days has had pains in chest. Cough more troublesome.

Feels weak & soon tired.

30th XXVI. INJECTION .05 gm.

May 3rd XXVII. INJECTION .06 gm.

Still complains of pain & tightness in chest.

Sputum T.B. not numerous.

5th XXVIII. INJECTION .045 gm

Throat & chest very sore.

7th XXIX. INJECTION .1 gm.

9th XXX. INJECTION .1 gm.

11th Not feeling so well to-day. Feels weak & giddy. Nausea & Pain in chest.

Cough not very troublesome.

Appetite moderate.

Goes out on fine days.

12th Does not feel so well to-day. Says he is losing weight fast & that he feels worse after injections. Does not wish to have any more & wants to go home.

[Shirley, continued]

May 12th Weight 8 st 8½ lb. (On admission 9 st 6 lb).

Lungs. Dulness more marked over both apices, reaching down to 3rd rib in front on L'. Marked hollow above & below both clavicles.

Auscultation L' apex. R.M. uneven & hollow in quality. To-day, for the first time, some large moist rales are heard below the L' clavicle. V.R' increased, but pectoriloquy can not be detected.

R' apex. R.M. harsh & bronchial.

A few dry râles are heard.

L' base behind. Still numerous fine moist rales heard all over

V.R. rather increased.

R' back, a few dry rales.

R.M. rather hollow in quality.

Sputum: T.B fairly numerous, well formed.

May 13. Discharged at own request.

Francis Rocca: aet 29. Sheffield.
Italian, Ice-cream seller. Admitted March 12th 1891.

Complaining of cough & spit, hoarseness, shortness of breath, pain in the throat & chest, & loss of flesh.

Illness began 15 months ago when he was following his business at a fair. He began to cough, & spit blood several times. He seemed to get well in about two weeks' time.

Nine months later (in October 1890) he began coughing in the night & brought up about ½ pint of thick blood, he came to the S.G.I as an Out patient,

[Extract from the Out patient Book. Oct 23rd 1890.

Francis Rocca aet 28. Ice cream seller.

Cough, 5 wks. Haemoptysis, in mouthfuls, 10 days, & last year also in summer. No loss of flesh. Hoarseness all summer.

Exam: R apex, - defective movement, loss of resonance, bronchial breathing, tubular behind.

One or two subcrepitant râles.

Fauces congested.]

The cough has continued more or less ever since Oct 1890. The hoarseness has been coming on for about a year, he had a good deal of shouting "Ice-cream" to do. He has been getting steadily weaker & has lost flesh. Has had night sweats but not profuse.

Last summer he had frequent attacks of diarrhoea.

[Rocca, continued.]

Tongue clean, Appetite & digestion good. B' constipated.

Previous Health fairly good. Patient was born in Sheffield of Italian parents. He is un-married. Does not remember any serious illness.

Two years ago he had an ischio-rectal abscess, which was opened, but it left no fistula.

Has had Gonorrhoea twice.

No history or signs of Syphilis. (No rashes, sore-be.)

Family History: Father died with "fistula" when patient was 5 days old.

One brother died of consumption at 20 yrs of age.

Others are living & healthy.

Physical Exam: Weight 11st 4lb (3 yrs ago 13st 4lb).

Finger ends slightly clubbed. Nails not arched.

Temperature normal. Pulse 90. weak, low tension.

Sputum .1 oz. in 24 hours. muco-purulent. frothy.

T.B. found. not numerous.

Lungs: R' apex slight flattening & diminished movement under R' clavicle. Percussion dull to 2nd rib.

R.M. bronchial, a few subcrepitant rales.

R' supra scapular region – percussion note dull.

R.M' tubular with subcrepitant râles

V.R. increased – Bronchophonic.

L. Apex slight loss of resonance. R.M harsh. No râles.

Breath sounds normal at both bases.

[Rocca, continued]

Heart: dulness normal, sounds indistinct & weak. No murmur.

Larynx: Oedematous swelling over both arytenoids. One aryteno-epiglottidean fold swollen so as to hide the vocal cord. (Right)

Urine: Sp. g. 1015. Acid. No albumen. No sugar.

[Rocca, continued]

March 18th '91. 9.A.M. I. INJECTION .0005 grm

11.P.M. No reaction. Feels comfortable.

" 19th 9.A.M. II. INJECTION .001 grm.

Slight pain in chest in afternoon.

" 20th. 9.A.M. III. INJECTION .002 grm.

11.P.M. Slight pain in chest.

" 21st 9.A.M. IV. INJECTION .003 grm.

9.P.M. Headache & pain in chest.

" 22nd. 11.A.M. V. INJECTION .004 grm.

Throat has been more painful & hoarseness greater since injections were commenced.

" 23rd. 9.A.M. VI. INJECTION .005 grm.

Throat very irritable all day.

" 24th 9.A.M. VII. INJECTION .004 grm.

Comfortable at night.

" 25th. 9.A.M. VIII INJECTION .008 grm.

Weight. 12 st (gain).

Lungs. Physical signs much the same.

Very few moist sounds detected.

Tubular breathing & Bronchophony at back of R' apex are even more distinct than before.

Larynx oedema diminished, small ulcer on R' arytenoid.

" 26th. 9.A.M. IX. INJECTION .01 grm.

11.P.M. No change.

[Rocca. continued.]

March 24th 9.A.M. $\overline{X}$. INJECTION .012 gm.

11.P.M. Slight headache, wandering pains in chest & legs. Throat irritable.

29th 9.A.M. $\overline{\dot{X}I}$. INJECTION .015 gm.

11.P.M. Nausea. Pain in L. chest & in L. leg.

Sputum: T.B fairly numerous, often joined end to end so as to appear very long.

30th. 9.A.M. $\overline{\ddot{X}II}$. INJECTION .018 gm.

11.P.M. Headache, giddiness & sore throat.

31st 9.A.M. $\overline{\dddot{X}III}$ INJECTION .02 gm.

Throat still very sore in evening, soreness has extended to chest.

The temperature, which was normal on admission has now a distinctly hectic character. (See chart 23).

April 1st 9.A.M. $\overline{XIV}$. INJECTION .025 gm.

11.P.M. Pains in head, L. chest & both legs.

Weight 12 st $0\frac{3}{4}$. (gain of $\frac{3}{4}$ lb).

2nd 9.A.M. $\overline{XV}$. INJECTION .03 gm

5.P.M. Temp. 101.6. Pain in chest & legs. Headache, nausea & almost complete loss of appetite.

4th 9.A.M. $\overline{\dot{X}VI}$. INJECTION .035 gm.

8.P.M. Headache, severe pain in L. arm causing great pain on movement.

5th Gland enlarged & painful in L. axilla.

Throat very sore.

Sputum: A few T.B found, ill defined, not beaded.

[Rocca, continued.]

April 5th. Considerable night sweats now. Hectic.

There are several enlarged & tender lymphatic glands behind the R' sterno-mastoid.

Lungs: Physical signs are not much altered.

Fewer moist sounds on the whole.

6th. Q.A.M. XVII. INJECTION .04 gm.

Patient complains of a "lump in the throat" which he says is "getting larger & lower down".

Nothing seen on fauces.

Much oedema over both arytenoids & on R' side

the ulcer is distinct & larger than at last note.

7th Throat very sore, much hoarser.

Enlarged gland behind R' sterno-mastoid.

Appetite very poor.

8th Pain in throat & both legs.

Has difficulty in eating & drinking or rather he is afraid to do so because of the violent coughing it gives rise to.

9th Did not sleep well last night on account of throat. Used Mann's inhaler with some relief.

10th Q.A.M. XVIII. INJECTION .04 gm.

Throat still bad, swallowing painful.

No tonsillitis.

11 P.M. Throat very bad, voice almost gone.

Cannot drink, but can eat a little solid food.

Ordered poultices to throat & inhalations of Tr Benzoin Co.

[Rocca, continued]

April 11th Slept better last night.

10.45 A.M. Had a rigor. Temp 102.6.

12th Slept better. Throat rather easier.

Sick at 7.30 A.M. 2 P.M. Temp 102.4.

13th Throat rather easier.

14th Appetite rather better to-day. 2 P.M. Temp 102.2.

15th 9 A.M. XIX. INJECTION .04 grm.

Weight. 11 st 4¼ lb. (loss).

18th Throat not so easy, Sick about 6 P.M.

Pain in R' chest after.

19th Sick at 8.30 P.M. after coughing

Sputum. T.B. few & very distinctly beaded.

21st Pain in throat & chest very bad.

22nd Weight. 11 st. 3¾ lb.

23rd Sick about 8.30 P.M. Pain in head & chest.

Temp, which usually falls at 11 P.M, is 101 to-night.

24th Severe headache & pain in chest in the morning

11 A.M. Temp 103.6. (See chart 26).

Attacked by the prevailing Influenza. (La Grippe

along with other patients in the ward.

Ordered Antipyrin gr X. Brandy ℥IV. per diem.

8 P.M. Temp 103.6. Pain rather better.

25th Still pain in back & R' side, severe headache.

Slept fairly well.

Lungs physical signs at apices unaltered.

Over both bases behind are heard a few

bronchitic rales & rhonchi.

No dulness at bases.

[Rocca, continued.]

April 26th Pain in chest & back, nausea.

Temperature has not yet come down to normal.

24th Pain in back & sickness in morning.

8.P.M. Temp. 102.4.

Ordered Antipyrin gr X.

28th Nausea, vomiting & pain in chest.

Throat much easier.

Sumgs: Diminished resonance above & below R' clavicle, (not dull), also in L' supra clavicular region.

The resonance is not more defective than on admission

R.M. over R' apex in front, tubular in quality, no râles.

L' apex front. R.M. harsh & bronchial

Posteriorly, dulness more marked over R' supra scapular region. R.M. tubular. No rales above. Numerous fine moist rales over R' scapula. Rhonchi below.

L' supra scapular region, R.M. bronchial a few rhonchi below.

V.R. not obtainable. Voice has gone.

April 29th. Slept well last night. Still pain in chest.

Cough very troublesome.

Haemoptysis (slight) in evening.

30. Says he has felt much worse during last week.

Haemoptysis continues. Wishes to go out.

[Rocca, continued]

May 1st Pain in R' chest. Haemoptysis worse.

Weight:- 11 st $3\frac{3}{4}$ lb.

2nd Slept badly last night. Vomited in morning. Much pain in chest & felt very weak.

Discharged at own request.

Intends to return to Italy in a few weeks if he feels well enough.

June 5th. I hear that this patient died a few days ago.

Percy Gavin: aet 25. Sheffield.
Late Private 5th North^d Fusiliers. Admitted Mch 16th 91.

Complaining of cough, spit, haemoptysis occasionally, pain in chest, shortness of breath, night sweats. loss of flesh. (lost 9 lb since Xmas.)

Illness began in January '86 when patient was engaged in military manoeuvres at Delhi, he began with a cough (which has continued off & on ever since) & severe diarrhoea (not dysentery).

He was in hospital for two months & was sent to a hill station for the rest of the summer.

He seemed to get quite well, with the exception of a slight cough, & remained so for two years.

In Jan' '89 he got cold with lying out all night his cough got bad again & he was admitted to hospital on account of spitting blood.

He was in hospital more or less for 9 months & & was then invalided home to Netley.

He was discharged from the army in Sept' 1890.

Tongue clean. Appetite & digestion good. B' reg.

Previous Health: very good. No serious illness.

Family History: Parents both living & well.
One brother died at 25 of lead colic & consumption.
The other brother is living, aged 30, but is "consumptive."
No sisters. No other family history of phthisis.

[Gavin, continued]

Physical Examination:-

Weight 10 st 1 lb. Height 5 ft 9 in.

Finger ends clubbed.

Sputum muco-purulent. T.B. abundant.

Pulse 84. Resp. 33. Temp. 98. (at 6.P.M).

Heart:- Dulness normal in size. No murmur.

2nd sound at base reduplicated.

Lungs:- L' apex front. slight flattening below L' clavicle

V.F. increased there & loss of resonance to percussion

down to 3rd rib. V.R. increased.

Moist rales (subcrepitant) abundant.

No pectoriloquy.

R' apex front. R.M. harsh & a few fine moist

rales.

Posteriorly, Dull note over L' supra-spinous fossa.

Rales over both apices behind.

Bases normal.

Urine. sp.g. 1015. Neutral. No albumen. No sugar.

Phosphates on boiling.

[Gavin, continued]

March 20th Q.A.M. **I. INJECTION** .002 gm.

11.P.M. No reaction. Slight haemoptysis.

21st Q.A.M. **II. INJECTION** .004 gm.

22nd 11.A.M. **III. INJECTION** .006 gm.

Pain in small of back & in axillae at night.

23rd. Q.A.M. **IV. INJECTION** .008 gm.

11.P.M. Has been comfortable all day.

24th Q.A.M. **V. INJECTION** .008 gm.

11.P.M. Headache. pain in chest & axillae. Sick at 4.30.P.M.

25th No injection. Nausea. Slight haemoptysis.

26th Q.A.M. **VI. INJECTION** .01 gm.

11.P.M. Some pain in back.

27th Q.A.M. **VII. INJECTION** .012 gm.

11.P.M. Comfortable

Lungs:- L'apex front. V.F. increased. Resonance, as before. Moist rales, more abundant & larger (mucous) down to 3rd space. V.R. increased.

R'apex - abundant subcrepitant rales, especially after coughing.

Posteriorly. L', moist rales abundant over supra-spinous fossa. R.M. bronchial down to base, with moist rales after coughing.

R supra-spinous fossa, a few subcrepitant râles.

Sputum. T.B. well formed, not very numerous.

Weight:- 9 st 11 lb. (loss)

29th. Q.A.M. **VIII. INJECTION** .015 gm

11.P.M. Comfortable.

[Gavin, continued]

March 30th 9.A.M. IX. INJECTION .018 gm.

31st 9.A.M. X. INJECTION .02 gm.

April 1st 9.A.M. XI. INJECTION .02 gm.

No change after last three injections except some tenderness in back at seat of puncture.

Weight 9 st 10½ lb

2nd 9.A.M. XII. INJECTION .025 gm.

3rd 3.A.M. Severe headache, nausea, vomited later.

Slight hæmoptysis & epistaxis

Temp 99.4.

4th 9.A.M. XIII. INJECTION .03 gm.

Lungs: Physical signs much the same.

Fewer moist sounds.

Sputum frothy, no blood.

T.B fairly numerous, very distinctly beaded, often joined end to end.

5th. Headache & nausea this morning. No injection.

6th. 9.A.M. XIV. INJECTION .035 gm.

11 P.M. Comfortable. No night sweats lately.

8th 9.A.M. XV. INJECTION .04 gm.

11 P.M. Pain in R. axilla, no gland felt.

Weight 9 st 10 lb

9th 9.A.M. Sick. Pain in both axillae.

10th 9.A.M. XVI. INJECTION .045 gm

9.P.M. Says he "feels splendid".

12th 9.A.M. XVII INJECTION .05 gm.

Comfortable at night.

[Gavin, continued]

April 15th. 9.A.M. XVIII. INJECTION .05 gm

Feels very well to-day.

Weight 9 st 10 lb.

18th 9.A.M. XIX. INJECTION .055 gm.

Headache & tightness of chest in the evening.

19th. Sputum. T.B few, often joined end to end.

20 Feels very comfortable, especially when he has not had an injection.

Does not cough so much.

24th. 9.30.A.M. Sick. 11.30.A.M. Sick. Temp. 100.

Pains in chest. back & limbs.

25th 11.A.M. Temp 100.8. Pains rather better.

[The Temperature in the last two days is the highest since admission. Patient appears to have a slight attack of ~~the~~ La Grippe from which four other patients are suffering in the same ward.]

Lungs:- L. Apex. percussion dull as in last note.

V.R. increased. Moist rales abundant.

R. apex not nearly so dull as L'.

Subcrepitant rales abundant.

Posteriorly: L' supra scapular reg' Subcrepitant rales. R' sup' scap' reg'. [redacted] M. bronchial.

No rales.

At bases very few rales. No dullness.

April 29th. For last 4 days has complained of pain in R side of chest on coughing. Otherwise comfortable.

[Gavin, continued]

April 15th. 9.A.M. XVIII. INJECTION .05 gm

Feels very well to-day.

Weight 9 st 10 lb.

18th 9.A.M. XIX. INJECTION .055 gm.

Headache & tightness of chest in the evening.

19th. Sputum. T.B few, often joined end to end.

20 Feels very comfortable, especially when he has not had an injection.

Does not cough so much.

24th. 9.30.A.M. Sick. 11.30.A.M. Sick. Temp. 100.

Pains in chest. back & limbs.

25th 11.A.M. Temp 100.8. Pains rather better.

[The Temperature in the last two days is the highest since admission. Patient appears to have a slight attack of the La Grippe from which four other patients are suffering in the same ward.]

Lungs:- L. Apex, percussion dull as in last note.

V.R. increased. Moist rales abundant.

R. apex not nearly so dull as L'.

Subcrepitant rales abundant.

Posteriorly: L' supra scapular reg' Subcrepitant rales. R' sup' scap' reg'. [redacted] M. bronchial.

No rales.

At bases very few rales. No dulness.

April 29th. For last 4 days has complained of pain in R side of chest on coughing. Otherwise comfortable.

[Gavin, continued.]

April 30th 9.A.M. XX. INJECTION .05 gm.

May 3rd 9.A.M. XXI. INJECTION .06 gm.

11.P.M. No change in evening.

Sputum :- T.B. very numerous.

4th Feels better this morning than he has done for some time.

5th. 9.A.M. XXII. INJECTION .045 gm.

Feeling comfortable in evening.

6th. 9.A.M. XXIII. INJECTION .1 gm.

9th Wishes not to have an injection this morning says he has not felt so well since the last & has had more pain in the chest.

10th Does not feel much better to-day. She is in low spirits. She thinks he is not improving much & wishes to go out next week to do some light work. She says he has got weaker lately & has had a good deal of pain in the chest, the only improvement is in the cough, which is not so severe as when he came in, & in the blood-spitting which has not occurred at all for two weeks. She thinks this improvement is due to the rest & quiet he has had in the hospital, rather than to the treatment.

[Gavin, continued]

May 13th **Weight**: 9 st 10½ lb. (10 st 1 lb on admission)

Sputum. Quantity less than on admission

T.B. not very numerous. well formed & distinctly beaded.

Lungs: Physical signs not much different.

L' apex. Moist rales (subcrepitant & mucous) abundant down to 3rd rib.

Dulness not more marked.

V.R. increased.

R' apex. Very slight loss of resonance.

Subcrepitant rales numerous.

Posteriorly: Moist sounds over L' apex

Very few over R'.

Bases. No dulness. No râles.

R.M. normal.

May 13th Discharged, at own request.

Simeon Nokes aet 19. Rotherham
Coal Miner. Admitted February 19th. '91.

Complaining of cough, spit, night sweats, loss of flesh & general weakness.

He has had a cough off & on for 4 years, with frothy & purulent expectoration. These were always worse when he was at work. Has had night sweats for a year. He has never spit blood.

He has only worked about two years in the last four, working for a few weeks at a time & then being confined to the house for a few weeks.

At these times, the complaint was always the same viz. cough & expectoration with pain in the back & head.

During the last attack he was much worse for a fortnight so came into the S. G. S.

He has lost one stone in weight during the last 2 months.

Tongue clean. Appetite fair. Bowels constipated.

Previous Health: Patient was a weak & unhealthy child, but in youth his health has been good up to 4 years ago when he commenced work.

[Nokes, continued]

Family History: Both parents living & well. One brother died of "consumptive bowels" at 3 yrs of age. Has three brothers & three sisters living & strong.

Physical Examination: (March 4th 1891).

Weight. 9 st 1⅓ lb. Height 5 ft 4½.

Chest well formed. movements good.

Heart normal.

Lungs. no definite physical signs.

Sputum muco-purulent. no blood.

No T. B. found.

Urine sp. g. 1020. acid. No alb. No sugar.

[Notes, continued.]

March 5th Q.A.M. $\dot{I}$. INJECTION .001 gm.

3.P.M. Profuse perspiration.

9.P.M. Slight headache & pain in chest.

11.P.M. No reaction. Temp. 99.6.

6th Q.A.M. $\ddot{II}$. INJECTION .002 gm.

11 P.M. No reaction.

7th Q.A.M. Some pain & swelling at seat of first injection in loin.

Slight haemoptysis last night.

8th Q.A.M. $\dddot{III}$. INJECTION .004 gm.

11 P.M. No change. Pain in loin better.

9th Q.A.M. $\dot{IV}$. INJECTION .005 gm.

Enlarged & tender lymphatic gland in left axilla, painful since 4 A.M.

11 P.M. Pain extending down L. arm & severe headache.

11th Q.A.M. V. INJECTION .004 gm.

12. Q.A.M. $\dot{VI}$. INJECTION .004 gm.

11 P.M. Comfortable.

Weight. 9 st 3 lb (gain)

Sputum. No T.B. found

Lungs No definite physical signs.

R. apex front ? R.M. slightly tubular with prolonged expiration & increased V.R.

13th. Q.A.M. $\ddot{VII}$. INJECTION .01 gm.

14th Q.A.M. $\dddot{VIII}$ INJECTION .01 gm.

9.P.M. Some headache & pain in back.

[Notes. continued].

March 15th 10.A.M. IX. INJECTION .012 gm.

11.P.M. Painful swelling over R. loin — seat of injection this morning.

14th Swelling in loin nearly well. Feels better.

18th Weight 9 st 5½ lb (gain)

Sputum. thin frothy mucus.

No T.B. found.

19th 9.A.M. X. INJECTION .015 gm

11 P.M. Pain & swelling at seat of injection (L. loin).

20th 9.A.M. XI. INJECTION .014 gm.

Lungs - No definite physical signs.

R. apex ? coarse R.M. V.R. increased.

No rales.

[Throughout, has suffered from swelling, pain & redness at seat of punctures, & some enlargement of ascillary glands necessitating discontinuance of injections for a day or two every now & then.]

21st Swelling on both loins painful.

Slight haemoptysis during night.

22nd Back still painful, swelling nearly gone.

Sputum: No T.B. found

23rd Comfortable.

24th 9.A.M. XII INJECTION .02 gm.

Back rather painful at night. Well otherwise.

25th 9.A.M. XIII. INJECTION .025 gm.

Comfortable at night.

[Notes, continued]

March 25th Weight. 9 st 6½ lb (gain)

Sputum tinged with blood.

Three or four T.B found for the first time.

24th 9 A.M. XIV. INJECTION .03 gm.

11 P.M. Severe pain in chest & legs. Headache.

28th. Did not sleep well last night. No injection.

Comfortable this morning.

29th Physical signs as before.

30th 9 A.M. XV. INJECTION .04 gm.

No change in evening.

31st 9 A.M. XVI. INJECTION .045 gm.

April 1st 9 A.M. XVII INJECTION .05 gm.

11 P.M. Pain in R' axilla, side of last injection.

Weight 9 st 6 lb. (loss of ½ lb)

Sputum Slightly frothy, occasionally tinged with blood. No T.B found.

Lungs: Beneath R' clavicle, slight but distinct want of resonance. R.M. harsh.

V.R. increased.

2nd Pain in back & R' side of chest in morning.

Better in evening.

4th No pain in axillae now, though enlarged glands can be felt in both axillae.

9 A.M. XVIII. INJECTION .06 gm.

5th Comfortable this morning.

No pain nor tenderness of axillary glands.

8th Weight 9 st 7½ lb (gain)

[Notes continued]

April 6th. 9.A.M. XIX. INJECTION .04 grm.

9th " XX. INJECTION .08 grm.

12th " XXI. INJECTION .09 grm.

There has been no change worthy of note after the last three injections. No glandular swelling.

14th Allowed out for an hour as the weather was fine.

15th Out again this morning. Feels better.

Weight 9 st 8¼ (gain).

16th. 9 A.M. XXII INJECTION .1 grm.

Kept in bed rest of day.

Axillary glands swollen at night.

18th Axillary glands still enlarged. Not painful.

Feels comfortable.

19th Sputum. No T.B. found.

21st 7.A.M. Complaining of severe headache, pain in back & limbs. Nausea.

Vomited twice.

Nothing fresh in chest.

Feeling very ill in afternoon.

11.P.M. Temp 103.4. Cough not increased.

Given Mist Quinin Effervescent (gr V) t.d.s

22nd Evidently attacked by the prevailing Influenza.

(See chart 42)

Temp 2 A.M. 103.8. Slept fairly.

Headache. Vomited during night.

8.P.M. Much better. Has perspired profusely.

No fresh physical signs.

[Notes. continued]

April 23rd Slight haemoptysis in morning.
Felt very well at night. Temp' 98°.

24th Good night. Comfortable all day.

25th Allowed up again to-day.
Lungs: Distinct loss of resonance below R. Clavicle. R.M. No rales over apices. Posteriorly. No dulness. Numerous dry rales over both lungs.

30th. Feeling fairly well during the last 5 days though rather weak after attack of Influenza & looks "pulled down."
Has suddenly made up his mind to go home & declines further injection.

May 3rd Sputum: No T.B found.

5th Discharged at own request.
Feeling much better since last note.
Appetite good. Coughs seldom
Says he feels very well.

Geo. H. Dawson.- aet 21.- Sheffield.
Steel hammer. Admitted February 20th 1891.

Complaining of cough & spit. loss of flesh & general weakness.

Illness began 4 wks ago when he got cold at work he began with a severe cough & spit which got worse. He had to give up work, & not having anything to depend on, he did not get much support. He began to get much weaker & lost flesh rapidly. He has had no night sweats & no hæmoptysis. Complains of no pain. There is some dyspnœa on exertion. Tongue clean. Appetite & digestion good. Bowels rather constipated.

Previous Health:- very good. No serious illness. Never very stout, his weight never was above 9 stones.

Family History:- Father, very intemperate, died at 45. he had a bad cough & "broke a bloodvessel" shortly before he died.
Mother died about same time, aet 34, cause unknown. she had a cough.
Sister died aet 14, cause unknown.
Another sister & brother are living & well.

[Dawson, continued.]

Physical Exam:- (Feb 2nd '91.)

Weight 8 st 2½ lb (never has been over 9 st.)

Pale & anaemic. Finger ends clubbed. Nails arched.

Pulse 90. regular. Resp: 20.

Heart. sounds normal.

Lungs: Right. Slight flattening above & below R. clavicle movement there deficient.

Resonance defective & increased resistance down to 2nd rib. V.R. increased.

R.M. harsh, occasional sibillant râles.

R. supra-scap. reg. Dull. R.M. bronchial.

Left apex Nothing abnormal detected.

Bases normal.

Sputum:- Thin, frothy. A few T.B found.

Urine:- 1019. Acid. clear. No alb. No sugar.

[Dawson, continued.]

March 5th. 9.A.M. **I. INJECTION .001 gm.**

5.P.M. Pain in R. shoulder. Severe headache, Pain in back & R. side of chest. Sputum increased. Temp. 101.6. Pulse 106.

11.P.M. Feels easier than in afternoon.

6th 9.A.M. **II. INJECTION .001 gm.**

9.P.M. Some pain in L. side of chest. Headache.

8th. 9.A.M. **III. INJECTION .002 gm.**

Severe headache after 3.P.M. Pain in R. side of chest & in R. leg.

9th 9.A.M. **IV. INJECTION .004 gm.**

5.P.M. Headache. Pain in L. side of chest.

10th. 9.A.M. **V. INJECTION .005 gm.**

11.P.M. Comfortable.

[The injections above have been made into the lumbar region of the back, on alternate sides every day, beginning with the right, & it will be noticed that, after injection the patient has always complained of pain in the same side of the chest as the injection was made.]

11th 9.A.M. **VI. INJECTION .006 gm.**

11.P.M. Headache. Pain in L. chest. Feels weak.

Weight 8 st 2 lb. (loss.)

Sputum, thinnish frothy, some muco-pus.

T.B numerous.

[Dawson, continued]

~~Mch~~ 12th Q.A.M. VII. INJECTION .008 gm.

11.P.M. Headache. Pain in neck, chest & legs.

Mch 13th. Lungs:- R' apex front, physical signs same as in previous note, no râles to-day.

R' base. R.M. weak, a few moist rales heard.

14. 10.30 A.M. VIII. INJECTION .01 gm.

9.P.M. Temp. 102°. Severe headache, Pain in legs.

15th 10 A.M. IX. INJECTION .012 gm.

8.P.M. Temp. 102.6. Pulse 100. Resp. 26.

Cough very troublesome. Pain in chest & R' shoulder

No rigor.

16th No pain. Has coughed more since injections were stopped.

18th. Q.A.M. X. INJECTION .012 gm.

8 P.M. Temp' 102.4. Fairly comfortable.

Weight 8 st 3¼ lb (gain).

20th. Q.A.M. XI. INJECTION .015 gm.

Lungs:- Physical signs at R' apex much the same - Moist sounds rather more abundant.

R' apex behind:- Bronchophony ~~very~~ distinct at upper angle of scapula.

R' base behind - few rales. Pleuritic friction at R' infra axillary region.

21st Friction more distinct at R' base & R' infra-axillary region.

[Dawson, continued]

March. 22nd. Not feeling well; pain in chest. No injection.

Sputum: Quantity increased.

Frothy muco-pus. T.B. numerous.

23. Feels weak & ill this morning. No injection.

24th. 9.A.M. **XII. INJECTION .02 gm.**

11.P.M. Severe headache all afternoon & pains all over. Chills. Temp. 103.4 at 5 & 8.P.M. (Chart 44).

25th. Better this morning. No injection.

Lungs:- R. base. V.F. & V.R. increased.

Few rales. Friction distinct in R. infra-ascillary region

Weight: 8 st 0¼ lb (loss).

Base painted with Tin Iodi.

11.P.M. Queer tempered to-night. Not quite himself. Imagines people are making fun of him & wishes to go out.

26th Better this morning.

Physical signs much the same,

Fewer rales at R. base.

Pleuritic friction more extensive & distinct at R. base & R. infra ascillary region.

V.F. & V.R. increased there.

29th Has been better since last note. No more complaints. Cough about the same.

Sputum increased, more distinctly muco-purulent & confluent.

A few T.B found.

[Dawson, continued]

April 1st No special complaint. Cough troublesome.

Weight. 8 st $0\frac{3}{4}$ lb (gain)

2nd Fairly comfortable. Dry cough to-day.

3rd Injections discontinued for last 10 days.

Weight has remained about the same.

Night sweats continue the same.

B' constipated throughout.

Seems:- signs at back much the same.

R' base behind rather freer from rales,

friction less distinctly heard.

4th G.A.M. XIII. INJECTION .01 gm.

11.P.M. Severe headache. Cough increased.

5th Sputum very few T.B found.

6th Not feeling so well. Chills after 4.P.M. & pain in S' chest. Temp 8 P.M. 102.4.

7th No injection at our request.

8th Feeling much the same. Weight. 8 st (loss)

10th Comfortable.

12th Rather better. Allowed out for $\frac{3}{4}$ hour as the weather was fine.

14th Allowed out again.

15th Out again. Weight. 7 st $11\frac{3}{4}$ lb (loss)

20th No more injections. Not so well, seems weaker, coughs more & does not care to get up. B' constipated.

23rd Sputum increased in quantity.

T.B. very numerous.

[Dawson, continued]

April 25th. Has had more pain in the chest, head, back & legs. Cough about the same. Expectoration increased. B' constipated.

30th Continues about the same. More pain in chest & limbs. Cough more troublesome. Feels very weak.

May 11th Rather worse since last note. Throat has been very sore & has been poulticed. Cough very troublesome. Considerable pain in head & back. Gets thinner. Appetite very poor.

12: Patient does not wish to continue the treatment.

Lungs: R' apex dull to 4th rib. under clavicle (?) bruit de pot fêlé. V.F. increased. R.M. hollow quality, large mucous râles. V.R' increased. Pectoriloquy. Posteriorly over R' supra-scapular region large moist râles. Pectoriloquy very distinct. L' apex. Some loss of resonance below clavicle, a few moist rales.

Bases: No dulness. No friction heard at R' base now. V.F. increased over R back. Slight friction sound at L' infra axillary region.

Weight. 4 st 4½ lb (8 st 2½ lb on admission)

Discharged.

Wm Hawksworth: aet 35. Sheffield.
Table blade stiker. Admitted March 14th 91.

Complaining of cough, spit, haemoptysis & pain in chest which have been gradually coming on during the last two years.
He began by spitting blood as he was walking in the street, he brought up about a cupful the first time & has been spitting blood on & off ever since. The cough did not come on until 8 months ago & has never been very troublesome.
During the last 3 or 4 months has been getting hoarse. No night sweats. No diarrhoea.
Tongue clean. Appetite & digestion good.
Patient has not lost weight & his general health has not suffered much.

Previous Health: History of acute nephritis with dropsy three years ago. He got all right. & has had no dropsy since though he usually has to rise twice in the night to micturate.
Had "gastric fever" at 14 years of age.

Family History: Father died of "Bronchitis" aet 55.
Mother living & well.
One brother died in infancy - cause unknown.
Has two other brothers & two sisters living & healthy.
No consumption in the family so far as he knows.

[Hawksworth, continued]

Physical Exam: Weight 9st 12 lb. Height 5 ft. 8½ in.

Pulse 90. Resp 24. Temp (6 P.M.) 98.8.

Heart dulness normal, sounds regular. No murmur.

2nd sound accentuated.

Lungs: R. Apex Diminished movement, flattening

Defective resonance above clavicle & in 1st & 2nd spaces.

Resonant below to 5th space.

R.M. markedly bronchial down to 3rd rib.

Bronchophony & pectoriloquy.

A few subcrepitant rales after cough, down to 2nd space.

Supra-spinous fossa. Resonance defective

R.M. bronchial.

Râles, as in front, but not so numerous.

Base. Resonance good. No rales. V.R. normal.

Left: Resonance fair. Weak bronchial breathing above clavicle. V.R. increased. No rales.

Back. Resonance good all over.

At apex weak bronchial breathing.

Sputum: muco-purulent. T.B numerous.

Urine: sp.g. 1018. No alb. No sugar.

[Hawksworth, continued]

March 20th 9.A.M. $\dot{I}$. INJECTION .001 gme

No reaction.

21st 9.A.M. $\ddot{II}$. INJECTION .002 gme.

12. noon. a few subcrepitant rales under S' clavicle.

22nd 9.A.M. $\dddot{III}$. INJECTION .003 gme.

3.P.M. No complaint.

Subcrepitant rales under S' clavicle & down to 4th space in front.

23rd. 9.A.M. $\dot{IV}$. INJECTION .005 gme

Slight haemoptysis in morning.

11 P.M. Comfortable, no more haemoptysis.

24th. 9.A.M. V. INJECTION .004 gme

Comfortable at night.

25th 9.A.M. $\dot{VI}$. INJECTION .008 gme

9.P.M. Complains of pain in chest.

Weight 9 st 13¾ lb. (gain 1¾ lb)

26th 9.A.M. $\ddot{VII}$. INJECTION .01 gme

27th 9.A.M. $\dddot{VIII}$. INJECTION. .012 gme.

9.P.M. Pain in S' side of chest.

Lungs:- R' no change.

L' Increased dulness at apex. R.M. as before.

Numerous subcrepitant rales in first 3 spaces rather smaller than on R' side.

No râles over back. R.M. as before.

Appetite improved. Gain in weight.

Sleeps well. Cough about the same.

Nausea after breakfast one or two mornings.

[Hawksworth, continued]

March 28th. 9.A.M. IX. INJECTION .014 gm

11.P.M. Copious perspiration.

29th 11.A.M. X. INJECTION .015 gm

11.P.M. Comfortable.

Sputum: T.B. not very numerous.

very distinctly beaded.

30th. 9.A.M. XI. INJECTION .018 gm.

31st. 9.A.M. XII. INJECTION .02 gm.

No change at night.

April 1st. 9.A.M. XIII. INJECTION .025 gm

8.AM. Slight haemoptysis.

9.P.M. Pain in back.

Weight. 10 st $0\frac{3}{4}$ lb. (gain of 1 lb).

2nd 9.A.M. XIV. INJECTION .03 gm.

Slight haemoptysis in morning. Well otherwise.

4th 9.A.M. XV. INJECTION .035 gm.

Lungs: Signs as before except that the rales at the L'apex are less numerous.

No râles over back.

Sputum. T.B a few found

very distinctly beaded.

Nausea improved. No pain. Appetite good.

Sleeps well. No night sweats.

6th. 9.A.M. XVI. INJECTION .04 gm.

8th 9.A.M. XVII. INJECTION .045.

9.P.M. Feels very comfortable.

Weight. 10 st 1 lb (gain of $\frac{1}{4}$ lb).

[Hawksworth, continued]

April 10th. q.a.m. XVIII. INJECTION .05 gm.

11 p.m. Some flying pains in R. chest.

11th q.a.m. XIX. INJECTION .05 gm.

11 p.m. Pain in L. chest

Lungs. R. as on admission.

L. Râles in front of apex as last week. now audible in L. supra scapular fossa. No other change.

12th. q.a.m. XX. INJECTION .055 gm.

Still complains of pain in L. chest.

13th. q.a.m. XXI. INJECTION .06 gm.

Pain in L. side & in L. chest.

14th. q.a.m. XXII. INJECTION .065 gm.

Pain in chest easier in evening.

Emp. Belladon ordered over L. back.

15th q.a.m. XXIII INJECTION .07 gm.

16th No injection. Pain in chest.

17th q.a.m. XXIV. INJECTION .075 gm.

18th q.a.m. XXV. INJECTION .08 gm.

Weight 10 st 1¼ lb (gain of ¼ lb).

Physical signs as last week.

Complains of pain in head & aching pain in limbs. Appetite variable, on the whole not quite so good as on admission.

19th. q.a.m. XXVI. INJECTION .09 gm.

20th No special change.

Has frequent pain in chest.

[Hawksworth, continued]

April 21st. q.A.M. XXVII. INJECTION .095 gm

22nd q.A.M. XXVIII. INJECTION .1 gm

Rather more pain in chest & between shoulders.

23rd Sputum: T.B very numerous. beaded.

24th [Attack of Influenza (La Grippe.)]

8.P.M. Temp. 101.8. Feels very hot. Flushed

Severe pain between shoulders.

25th Still severe pain in chest & between shoulders.

Ordered Quinin gr. iii. t.d.s.

26th Feeling better to-day.

27th Weight 10 st 2 3/4 lb. (gain 1 1/2 lb).

Physical signs as last week, except that defective resonance on R' side extends down to 4th space.

28th. q.A.M. XXIX. INJECTION .05 gm.
(Fresh bottle of Tuberculin)

No complaint in evening.

30th. q.A.M. XXX. INJECTION .045 gm

May 2nd q.A.M. XXXI. INJECTION .1 gm.

3rd Sputum: T.B. more numerous than ever.

4th q.A.M. XXXII. INJECTION .1 gm.

Weight 10 st 4 lb (gain)

Physical signs as last week.

Appetite good.

5th q.A.M. XXXIII. INJECTION .1 gm.

6th XXXIV. INJECTION .1 gm.

7th XXXV. INJECTION .1 gm.

8th XXXVI. INJECTION .1 gm.

[Hawksworth, continued]

May 9th XXXVII. INJECTION .1 gm.

11th XXXVIII INJECTION .1 gm.

No marked change after above injections.

Has more pain in shoulders & in chest.

13th XXXIX. INJECTION .1 gm.

14. Ordered. Ol Morrhuae ℥ss. t.d.s.

Weight. 10 st. 3¾ lb. (loss ¼ lb)

16th XL. INJECTION .1 gm.

19th XLI. INJECTION .1 gm.

21st XLII. INJECTION .1 gm.

24th XLIII. INJECTION .1 gm.

Patient says he has felt better in the last two weeks. Cough is about the same. Breathing easier. Expectoration less. No haemoptysis for 3 wks. Appetite very fair. Digestion good. B' regular, not loose. Sleeps well. Goes out every day. Never feels quite so well after an injection says it causes him to feel "muddled" & giddy for 3 hours after.

26th Weight 10 st 9 lb (gain of 5¼ lb).

Physical signs. The loss of resonance is nearly the same on both sides now, but does not extend so low on L.

R' apex. Râles not so numerous. R.M. bronchial.

L' apex. Weak bronchial breathing. Numerous crepitations audible down to 3rd space.

Bases. no râles.

[Case still under treatment]

Eliza Wilson:- aet 19. Sheffield.

Admitted March 6th 1891.

Complaining of Lupus of the nose & both arms.

Previous History: She has suffered from Lupus on the arms ever since she was 4 years of age. The nose broke out about 5 or 6 years ago. Since then both legs & the left foot have been affected at intervals.

She has been in the Sheffield General Infirmary four times before & has had the places scraped under an anaesthetic viz.

I. In July 1884, for 5 wks. Nose scraped.
II. In Nov 1888 " 2 wks. Nose scraped.
III. In Jan 1889 " 8 wks. Nose & cheeks scraped twice.
IV. In Jan 1891. " 4 wks. Nose & cheeks scraped.

The benefit after these operations was only temporary the places were soon as bad as ever.

She came in for treatment by Tuberculin on March 6th 1891.

Present State: The nose is affected only superficially on both sides, the ulceration not extending down to the cartilages. There are faint patches on both cheeks. On the extension surface of the Right upper arm near the axilla is a patch 4" long & 2" wide. On the inner side of the Left elbow is another patch 3" long.

[Wilson, continued]

There is a small patch just over the tarso-metatarsal joint of the great toe on the Right foot.

There is solid swelling of both legs from the knees to the ankles.

Nothing abnormal in chest.

Urine. 1022, acid. No alb. No sugar.

Weight. 10 st 1½ lb. Catamenia regular.

Other functions normal.

Family History - Father died of phthisis 19 yrs ago.

Mother died of laryngeal phthisis

One sister died of phthisis at 4 yrs of age.

One brother died very young, cause unknown.

One sister living aged 22. suffers much from sore throats.

[Wilson, continued]

March 23rd T. Injection .001 gm. 9 A.M.

Temp reached 99. Never before above normal.

Patient thinks the places look redder.

About midnight, she had a nightmare, felt a weight on her chest so that she could hardly breathe & woke in a fright.

Nurse said she shouted a good deal.

Coughed a little for the first time.

March 24th. 10 A.M. II. Injection .002 gm.

5.30 P.M. Complains of feeling very tired & sore, as if she had been beaten all over.

Patches on nose & cheeks redder than before.

R' arm slightly, & L' arm doubtfully, so.

Feels short of breath.

March 25th: Very restless all night, shivering, with alternations of heat & cold the whole evening.

Pain in back, smarting in both arms the whole night & burning in cheeks.

Has taken no breakfast.

Nose darkish purple. Both cheeks have a red areola 1" deep round the lupus patches, also on arms.

Foot, lupus patch surrounded by a zone of redness rather tender & slightly elevated.

[Wilson, continued]

March 26th. III. Injection .003 gm.

Much itching in arms & face last evening.

Slept well. No nightmare. Tongue clean.

Red areola has disappeared from face & arms.

One scab has peeled off L' arm.

March 24th Slept well. Arms itched a little last night but do not burn so much.

Patches on face & arms paler.

Menstruating this morning, a week before due.

No injection.

March 28th. Slept well. Feels well. Still menstruating.

No injection.

March 29th Feels well. Menstruation stopped.

" 31st. Slept well. Takes food well.

Had a bath last night, says arms smarted very much in water, never did so before.

Arms paler, some scabs come off.

Weight 10 st 3 lb. (gain of 1½ lb).

April 1st IV. Injection .004 gm.

Slept well last night. Takes food well.

Tongue clean. Looking better.

Arms painful last night.

" 2nd Shivering from 3.30 to 8 P.M. Pain in chest, worse on breathing. Back ached all last night, better to-day. Slept badly.

Tongue furred. Bad taste in mouth.

[Wilson, continued]

Nose, purple-red. Patches on both arms have an areola of redness around them 1½" broad.

April 3rd Better night, no pain, no shivering. Very tired yesterday & slept much. Nose not so purple. Arms not so red.

4th. Good night, slept well, no pains, no shivenings. not so tired yesterday. Nose & arms not so red.

5th V. Injection .005 grm.

2 P.M. Shivering & much coughing. then great dyspnoea & faintness. Catching pain in chest when coughing.

8 P.M. Temp. 103.6. Pulse 128, very small. Resp. 40.

6th Respiration increased in rapidity to 46 at 8 A.M. Cough rather better this morning. No sickness Not taken food well. Pain in Epigastrium. Ordered Brandy ℥ss. at midnight. Nose not so red. Arms look much better, No redness. Scabs are coming off.

7th. Better night. Pain still in Epigastrium, rather worse. Tongue furred. Nose & arms look better not so red & purple.

[Wilson, continued]

April 9th VI. Injection .004 gram. 9.30 A.M.

11 P.M. Temp 103.6. Resp. 46. Pulse 136.

Itched all over. No shivering but very hot.

Mouth dry, bad taste. Pain in back.

Ordered Brandy ℥ss every hour.

10th Not a good night. Rapid small pulse & rapid catchy breathing. Eyes suffused. Not so much cough as after last injection. Bad taste in mouth.

Nose & cheeks not nearly so purple as after previous injections. Arms slightly redder than before injection but not such marked deepening of colour as before.

15th VII. Injection .004 gram. 10 A.M.

Shivering in afternoon & hot afterwards. Limbs ache very much. Not so short of breath as last time.

8 P.M. Temp. 102.8. Resp. 36.

16th Restless night. Limbs still ache. Feels very tired. Cough not so much as before. Tongue fairly clean. Bad taste in mouth. Nothing abnormal in chest.

No increase of redness round patches. Arms looking much better, scales coming off.

[Wilson, continued]

April 19th VIII. Injection .008 gm.

11 P.M. Temp 100.8. A little cough.

20th Poor night. restless. slight dyspnoea. slight backache, No other pain. Tongue fairly clean. B' constipated. Arms look much better, all scabs have come off. No red areola as after previous injections.

23rd IX. Injection .009 gm.

8 P.M. Temp. 100.6.

24th Better night. No dyspnoea. No aches nor pains. Slight shivering. Tongue clean. Appetite fair. Arms & nose much better. Weight 9 st 8 lb.

27th X. Injection .01 gm 11 A.M.

8 P.M. Temp 101.2. Shivers. Feels very tired.

28th Poor night, slept latter part. No dyspnoea. Pain in back & shiverings Tongue clean. Appetite fair. Arms & nose slightly redder.

30th XI. Injection .012 gm. 10.30 A.M.

8 P.M. Temp. 100.

May 1st Fairly good night. No dyspnoea. Little cough. Some pain in back, none in limbs. Tongue clean. No bad taste in mouth. No redness of arms or face. Looking much better. Weight. 9 st. 8 lb.

[Wilson, continued]

May 4th XII. Injection .014 grm 11 A.M.

8 P.M. Temp 100.4. No dyspnoea.

5th Slept well. Very hot last night.

Pain in back.

Nose & arms looking much better.

No redness.

9th XIII. Injection .016 grm.

Slight pain in back in afternoon & coughed rather more. No dyspnoea.

10th Slept fairly. Little pain in chest.

Tongue clean. No bad taste.

Arms getting slowly better. No redness.

14th XIV. Injection .018 grm.

8 P.M. Temp 99.8. Very slight reaction.

15th Good night. No pain except in back.

Nose & arms look better. No redness.

Healing up nicely.

21st XV. Injection .02 grm.

11 P.M. Temp 100. Very slight reaction.

22nd Slept well. Some pain in back.

XVI. Injection .03 grm.

Temp normal at night. No reaction.

23rd Slept very well. No pain, except in back.

25th XVII. Injection. .021 grm.

No reaction.

26th Slept well. Slight pain in back.

[Case still under treatment.]

We will now proceed to discuss these cases as regards. (1) Physical signs. (2) Sputum & Tubercle Bacilli. (3) Temperature & Reactions. (4) Complications (5). Post-mortem appearances.

T. Physical Signs:- It will be seen that in none of the cases was there any marked improvement in the physical signs of the lungs under treatment, in the majority there was a progressive advance of the lesion.

In Dickinson & Dawson, the signs proceeded from those of moderate consolidation at one apex, to increased consolidation at that apex, with formation of cavities, & involvement of the opposite lung.

In Shirley, Gavin & Hawksworth, though the advance was not so marked, it has been distinct & the opposite lung has become slightly affected.

In Hokes, though there was a distinct phthisical history on admission, there were no definite physical signs, & the case was injected chiefly to test the diagnostic powers of Tuberculin.

On discharge, there were distinct signs of commencing infiltration at the Right apex.

In Rocco's case, the physical signs over the lungs were not greatly altered when he was discharged. The advance of the disease here

was mainly spent in the langrise which got rapidly worse.

Abundant fine moist rales appeared after injection at the base of the affected lung in three of the cases (viz. Dickinson - March 12th (p.16.) Shirley. March 13th (p.18.) & Dawson. March 13th (p.49). see cases) & these rales persisted as long as the patients were under treatment, the affected base gradually losing resonance & becoming dull to percussion. In Dawson (March 20th) (p.49) well marked pleuritic friction appeared also at the affected base & lasted for several days.

It would certainly appear as if the injection had succeeded in finding out & rousing into activity some tubercular deposits which before were quiescent, for they appeared too early to be fresh formations of tubercle.

Prof. McCall Anderson[1] draws attention to this & says: "It must never be forgotten that the extent of the disease is almost invariably greater than the physical signs would seem to imply. In most of the patients treated, moist râles have made their appearance at parts where, previous to the commencement of the inoculation, there were

1. Lancet. March 21st 1891. p. 652.

no traces of pulmonary mischief. These new physical signs cannot certainly always be attributed to the development of new centres of disease, the result of setting free tubercle bacilli to work mischief elsewhere, because they sometimes appear immediately after the first injection."

Dr. Coghill[1] also says that friction sounds & small superficial crepitations extending especially towards the base of the lung posteriorly, were noted after injection.

In Hawksworth's case (Mch 21st) a few subcrepitant râles appeared after the 2nd injection under the L. clavicle where before there had been no signs at all.

Dr. Heron[2] draws attention to the same phenomenon. She says "that moist sounds certainly became coarser & there seemed to be more of them at the site of the disease.

Also, in parts of the lung, where certainly no evidence of the existence of disease had been observed before tuberculin was used, there were noticed thereafter, in many instances, crepitations which were indistinguishable from those usually heard over the site of early

1. Lancet May 23rd '91. p. 1142.
2. Lancet. May 2nd '91. p. 944.

tuberculosis of the lung. These new physical signs were sometimes, but not always, accompanied with increase of dulness on percussion."

In two of the cases, painful swelling of the lymphatic glands was noticed after injection. In one case (Hokes Inch 9th) (p. 41) only the axillary glands were enlarged & painful. In the other (Rocca April 5th) (p. 24) the glands in the L' axilla & behind the R' sterno-mastoid were affected. This might arise in various ways, & we are disposed to think that in these two cases the causes were not the same.

In Hokes, there was considerable local irritation at the seat of injection in the back & the inflammation of the axillary glands was probably due merely to this irritation.

In Rocca, on the other hand, there was advanced tuberculosis of the larynx, & probably also tubercle of the cervical lymphatic glands which reacted to the injection of tuberculin.

II. Sputum & Tubercle Bacilli :-

Quantity of Sputum :- This remained about the same in two of the patients (viz Gavin & Nokes). In the other five, the quantity was increased, but especially in the two cases in which there was tubercular laryngitis. (Dickinson & Rocca.).

Tubercle Bacilli were found in the sputum of all the phthisical patients in varying numbers. In the case of Nokes (who on admission had a phthisical history but no physical signs) they were only seen once, & then only 3 or 4 were found but they were unmistakable (See Nokes Mch 25th). (p. 43)

Various methods of staining the bacilli were tried, but the one which succeeded best & which was usually practised was "Gabbit's". For this, two stains are necessary with the following composition :

Solution No. I. (Ziehl's)

Fuchsine	1 part
Acid Carbolic (crystalline)	5 "
Absolute Alcohol . . .	10
Distilled Water . . .	100

Solution No II. (Gabbit's).

Methylene Blue	1 to 2 parts.
Solution of Sulphuric Acid (25%)	100 "

A thin layer of sputum on a cover-glass is dried, & the cover-glass is passed through the flame of a spirit lamp, sputum side ~~downwards~~ upwards, three times to fix the albumen.

Warm a little of the Fuchsine solution in a watch glass until it begins to steam, & float the cover-glass on the solution sputum side downwards.

Allow it to remain for two minutes & then wash in distilled water until no more colour comes away.

Pour a little of the Methylene-blue solution into a watch glass, & float the cover-glass on this again for one minute.

Wash in water, dry & mount in Canada balsam.

Examine with $\frac{1}{12}$ ~~oil~~ immersion lens & Abbe's condenser.

The T.B. are stained pink with the Fuchsine & all other bacteria, leucocytes & epithelium are stained with Methylene blue.

<u>Various other bacteria</u> were found in the sputum, but, as Koch[1] himself says, "these bacilli never give the same colour reaction as tubercle bacilli, but stain like the leucocytes in the sputum in contrast to tubercle bacilli".

This is a most important distinction & one to which, as yet, no exception has been found.

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1. Etiology of Tuberculosis. Translated for the Sydenham Society by Stanley Boyd. 1886. p. 84.

In many specimens examined, I noticed the micro-cocci, arranged in groups of four, like sarcinae, described by Koch.[1]

In one sputum, examined a few days before the patient's death, an abundance of bacteria was seen forming slender rods & threads with spores in some places, forming almost a mycelial network. Some of these might have been mistaken for tubercle bacilli had it not been for the distinctive staining.

They seemed to resemble most the organism described by Crookshank as "Bacillus aerophilus."[2]

Apparently, W. Coghill[3] found similar organisms in the sputum of one of his patients.

Several times, after injection I have examined the blood of patients for tubercle bacilli but I have never found them there, nor can I hear that any one else has confirmed W. Liebmann's observation.[4]

Prof. Koch says[5] "it is possible to recognise some relation between the number of bacilli & the extent of the phthisical process," but in

1. Etiology of Tuberculosis. Syd. Soc. 1886. p. 115
2. Crookshanks Bacteriology. 3rd Ed. p. 348.
3. Lancet May 23rd '91. p. 1141.
4. Lancet. Jan 31st 91. p. 240.
5. Ibid. p. 108.

our experience, this does not always hold good in the case of the sputum.

For instance, in the sputum of Dickinson, for a week or two before his death, when both lungs were extensively infiltrated, tubercle bacilli were only found in small numbers. (See Dickinson's case. May 3rd & May 13th) (p. 12), but in the sputum of Hawksworth (April 23rd & May 3rd) (p. 58) with disease much less extensive crowds of tubercle bacilli were found.

Of course, much depends upon the morsel of sputum selected for examination, & herein lies a considerable fallacy, for, even after examining several specimens, one can never be sure that he has obtained a correct idea as to the number of bacilli in the sputum of a given day.

With regard to <u>changes in the form of the bacilli after injection</u> which have been described, nothing very definite has been observed.

In several cases, after a number of injections, the bacilli seemed to become much more distinctly beaded than at first.

In Gavin's sputum (April 5th & 19th) (p. 35 & 36) the bacilli were noticed to be frequently joined end to end so as to give the appearance of long threads & this was also noticed once in Rocca's sputum. (Mch 29th). (p. 24)

That the Tubercle bacillus is the sole cause of phthisis & other tubercular diseases is, we think, now satisfactorily proved.

It had been already discovered, that the cause of some other infective diseases, such as trichinosis & anthrax, was to be found in a micro-parasite, &, reasoning from analogy only, it seemed highly probable that the cause of tuberculosis, amongst other diseases, might also be found in some micro-organism.

But, after the wonderful series of experiments made by Koch & described in his paper on the "Etiology of Tuberculosis", doubt is no longer possible & the probability becomes a certainty.

Koch's experiments may be summed up, as follows:-

1. Wherever tubercular disease exists, tubercle bacilli can be found.
2. These bacilli can be isolated & cultivated on suitable media, such as blood serum, through many generations, until at length an absolutely pure cultivation is obtained.
3. A little of this cultivation introduced into the anterior chamber of the eye in a healthy rabbit will produce, first well marked tuberculosis of the iris (a disease which never occurs spontaneously in the rabbit) &, in time, general tuberculosis of all the internal organs.

4. If the organs of this animal be now examined, crowds of tubercle bacilli will be found wherever there is tubercular disease.

We may say therefore, with good reason, that the tubercle bacillus is not merely an accompaniment or a cause of Tuberculosis, but the only cause of that, without the Tubercle bacillus, there can be no Tuberculosis.

III. Temperature & Reactions:

It will be seen from the temperature charts that we obtained few of the typical reactions after injection, such as were described by Koch in his famous communication of November 15th.

He said[1] that "the general reaction consists in an attack of fever, mostly beginning with a rigor, the temperature often rising to 104° or even to 105.8, with articular pains, cough, great prostration, often nausea & vomiting, &c"

In none of our phthisical patients, perhaps fortunately for them, did we attain any results like this. With a few exceptions, which will be alluded to afterwards, the great majority of our injections caused very little discomfort. Perhaps this is due to the small initial doses & their very gradual increase, which allowed the patient to become habituated to the action of the fluid.

Dr Heron[2] mentions two cases, in each of which the temperature after injection rose only to 99.8. These two cases were instances of tuberculosis of the lungs, & in both of them, tubercle bacilli were found repeatedly & in large numbers in the sputum.

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1. Lancet. Nov 22. '90. p. 1085.
2. Lancet. April 25 '91. p. 922.

He says that these illustrate the fact that certain cases of well marked tuberculosis of the lung do not react in an unmistakable way to Tuberculin in moderate doses. Very severe reactions with high temperatures are, as a rule, consequences of large doses of tuberculin given at the beginning of treatment.

Where treatment is commenced with doses of 1 or 2 milligrammes it is exceptional, in his experience, to find that there result, either very high temperatures, or other symptoms of very severe reaction. He has seen, in his own practice, very little indeed of those symptoms of apparently serious depression which have often followed the administration of tuberculin.

Still, in our cases, there was often a distinct, if small, rise of temperature after injections, with symptoms which certainly pointed to some disturbance of the functions.

In Dickinson's case there were distinct reactions on March 14th & March 19th (p. 4) after injections of .012 & .015 gram respectively.

These were accompanied by chills or slight rigors, severe & general muscular pains & vomiting. There was no great rise in the temperature though this reached 102.8 on Mch 22nd after an injection of .014 gram. (Chart 3.)

Shirley on March 4th & 8th, after injections of 3 & 5 milligrms, complained of severe headache, nausea & faintness, but the temperature did not rise above 100.2. (p. 14. chart 11.)

Reed's chart certainly does not give one the idea of improvement under treatment. During the first week, the temperature continued nearly normal, in spite of the injections, but, after this, it gradually assumed a hectic type which was maintained up to his discharge. (Charts 21 - 24).

In Gavin's case, the temperature rarely rose above 100°, but there was a distinct rise after each injection, the temperature remaining normal when no injection was given. (Charts 28 - 35)

Dawson, after the 1st injection of .001 grm complained of severe headache & pain in the R side of the chest, & this was repeated after the 3rd injection. (p. 48) There was a still more distinct reaction on March 15th. (Chart 46).

In Hawksworth's case, with the exception of the influenza attack, the temperature has remained practically normal throughout, & he is at present (June 2nd) being injected with one decigramme of the original fluid every third day without the least personal inconvenience or effect on the temperature curve. (Charts 55 - 64).

The Lupus case (Eliza Wilson) shews a remarkable contrast to this. (Charts 65-73).

The temperature, usually normal, rose suddenly after injection above 103°. There was shivering, great dyspnoea, the respirations rising to 46 per minute, faintness, coughing, (p. 62 et seq) severe muscular pains & pain in the chest.

Altogether the patient looked very ill indeed.

At the same time the lupus patches became inflamed, red & painful & a distinct red areola appeared round each of them.

The whole disturbance occupied about 24 hours & then the temperature came down to normal again, remaining so until the next injection.

The dyspnoea in this case was urgent & did not at all resemble the panting, described by W. Heron[1] in his patient S. J—, which could be stopped at will.

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[1] Lancet. April 25th '91. p. 922.

IV. Complications: 1. During the months of April & May in Sheffield there was a remarkable outbreak of Epidemic Influenza (La Grippe), the death-rate in one week rose to 40 per 1000 per annum.

The disease ~~has~~ attacked a large number both of officials & patients in the Sheffield General Infirmary & amongst them four of the patients mentioned in this report viz Dickinson (p. 10), Rocca (p. 29), Hokes (p. 44) & Hawksworth (p. 58) from April 19th to April 25th.

Charts. 7. 26. 42. 60

The attack commenced with nausea or vomiting followed by severe headache & pain in the back & limbs. The temperature went up to 103 or higher & the feverish attack lasted about 3 days from beginning to end, leaving the patient weak & low.

Of course this was an accidental complication, but it was important in our cases, inasmuch as it discouraged some of the patients from continuing the treatment & decided them on going out.

2. Tubercular Laryngitis was found to be a very serious complication, & certainly the two patients who did worst were those in whom the larynx was affected. (Dickinson & Rocca).

Rocca's case, from the first was more a laryngeal than a pulmonary one, & he got decidedly worse during his stay in the hospital, though the physical signs scarcely pointed to

any advance of the lesion in the lungs.

Dr Heron[1] seems to have had the same experience for he says "with regard to the cases of laryngeal tuberculosis, it is a fact, that not one of them did well as regards the throat condition.

3. Eruptions - In our cases there was no instance of an eruption occurring after injection, such as has been described by Dr Crocker[2] & by others since.

In the case of a child injected at the Children's Hospital in this town, for tubercular joint disease, there was a very severe reaction after a dose of ·0005 gm. The temperature rose to 104°, there were convulsions & a general scarlatiniform eruption.

1. Lancet. May 2nd '91. p. 945.
2. Lancet Nov 22nd '90. p. 1093.

V. Post-mortem Appearances:

The account of the autopsy (p.13) in Dickinson's case speaks for itself. There certainly was none of the general tuberculosis which Virchow has described[1] in cases dying after treatment, & the appearances in no way differed from those usually found in phthisical patients.

There certainly was very complete caseous hepatisation of the lower right lobe, but there were no excavations in the lower lobes such as Virchow describes, nor was there any eruption of tubercles, recent or otherwise, on any of the serous membranes (other than the pleura). The softening & excavation at the apex was very rapid in this case & it is possible that the broken-down material, instead of being coughed up, might, as Virchow says, have been sucked into the lower part of the lung & excited a caseous pneumonia.

1. Lancet, Jan 14th '91. p.130.

The Lupus case (p. 60) was introduced chiefly to shew, that the same fluid which failed to produce typical reactions in phthisical cases was more successful in others.

The improvement in this case has been very distinct, though time only can shew if it is permanent. Probably the cure would be accelerated if the doses were increased more rapidly, as the later doses have failed to cause much reaction.

W. Chadwick of Leeds[1] has spoken very highly of Tuberculin in the treatment of Lupus & shewed a number of cases, where there was almost complete cure, after surgical treatment, frequently repeated, had failed.

He injected very large doses (over 1 gram) without any bad results.

It is certainly in Lupus that we hope for most benefit from Tuberculin.

In severe cases it would probably be worth while, first to scrape away the obvious lupus tissue under an anaesthetic, & then to commence the injection of Tuberculin for the cure of the disease which is not so evident.

1. At a meeting of the Yorkshire Branch of the Brit. Med. Ass. held at Halifax. April 24th 91.

Summary of Phthisis cases.

Name.	Age	Duration of treatment in Days.	Number of Injections	Maximum Dose in milligrams	Physical Signs. On admission.	Physical Signs. At discharge.	Weight. Admission st. lb.	Weight. Discharge st. lb.	Sputum. Admission	Sputum. Discharge.	Result.
Dickinson:	32	40	16	15.	R. apex. moderate consolidation	R. lung entirely consolidated cavities at both apices.	8 - 12	4 - 8½	4 oz Y.B. numerous.	9 oz Y.B. few.	Died.
Shirley:	25.	66	30	100.	L. apex moderate consolidtn	Both apices consolidated.	9 - 6	8 - 8½	1½ oz Y.B. numerous.	3 oz. Y.B. numerous.	Rather worse.
Rocca.	29.	29	19	40.	R. apex moderate consolidtn	Signs not increased in lungs.	11 - 4.	11 - 3¾	1 oz Y.B. few.	9 oz Y.B few.	Larynx much worse.
Gavin.	25	48	23.	100.	L. apex consolidation.	Signs slightly more marked.	10 - 1.	9 - 10¼.	1½ oz Y.B. numerous.	1½ oz Y.B. numerous.	Condition about the same.
Hokes:	19	43	22	100.	No signs.	Commencing at R. apex.	9 1¾	9 8¼.	1½ oz Y.B none	1½ oz Y.B. none.	Felt better. more signs.
Dawson.	21.	35	13	10	R. apex. moderate consolidation	Both apices. Cavity in R.	8 - 2½	4 4½	1¾ oz Y.B. numerous.	4½ oz Y.B. very num	Much worse.
Hawksworth:	35	69.	44.	100	R. apex mod consolidation	Signs rather increased, now commencing at L. apex.	9 - 12	10 - 9	1⅔ oz Y.B. numerous	¾ oz Y.B. very numerous	Feels much better.

To sum up the results of our cases:-

Of the seven phthisical patients, one is dead, three are decidedly worse, two have been discharged with their condition very little altered & one is continuing the treatment & believes it is doing him good.

This last (Hawksworth) is decidedly the most favourable case. She is steadily gaining in weight & has no pyrexia, though the physical signs show very little alteration & the sputum is crowded with bacilli

But, it must be remembered, that patients coming from poor homes & insufficient food will often rapidly improve when they get into a well regulated hospital.

Prof. Koch, in his first communication[1], said that "whereas in health & in subjects of non-tuberculous disease, the injection of ·01 cc has hardly any effect, in the tuberculous this quantity invariably produces a marked general, as well as a local, reaction".

But this has not been our experience.

In none of our cases of phthisis was there any such decided reaction as would lead, in the absence of other signs, to an absolute diagnosis of tubercle.

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1. Lancet. Nov 22nd '90. p. 1085.

It is true that, after injection, numerous râles appeared in the affected lung where before no râles were to be heard, but might not this effect be produced by other irritants acting on a part already diseased & therefore more vulnerable.

Dr. Bristowe[1] suspects "that further observation will shew, not only that Koch's fluid has no specific influence over tubercle, but that it is a property of septic inflammation generally to cause a limited attack of general fever & to aggravate inflammation in parts already inflamed; & that the effects of Koch's fluid are not specific in any degree as against tubercle, but belong to the same class of phenomena"

Dr. Coghill's[2] cases certainly were more encouraging than those related in this paper but some allowance must be made for the difference between the climate of Vienna & the notoriously smoky atmosphere of Sheffield

1. Lancet April 25th '91. p. 954.

2. Lancet. May 23rd '91.

W. Hiscon[1] in an admirable paper says — "no improvement was manifested in any of my cases that could not be accounted for by good food, stimulants, & healthy hygienic surroundings"; & we are very much disposed to agree with him.

The cure for phthisis, in our opinion, has yet to be found, & to be successful, it must attack, not the living tissue around the tubercular deposit, but the bacilli themselves — the cause of the disease.

1. Medical Press & Circular. March 4th '91. p. 215.

KOCH'S TREATMENT.

No. of bed

Name: Robert Dickinson

Age: 32

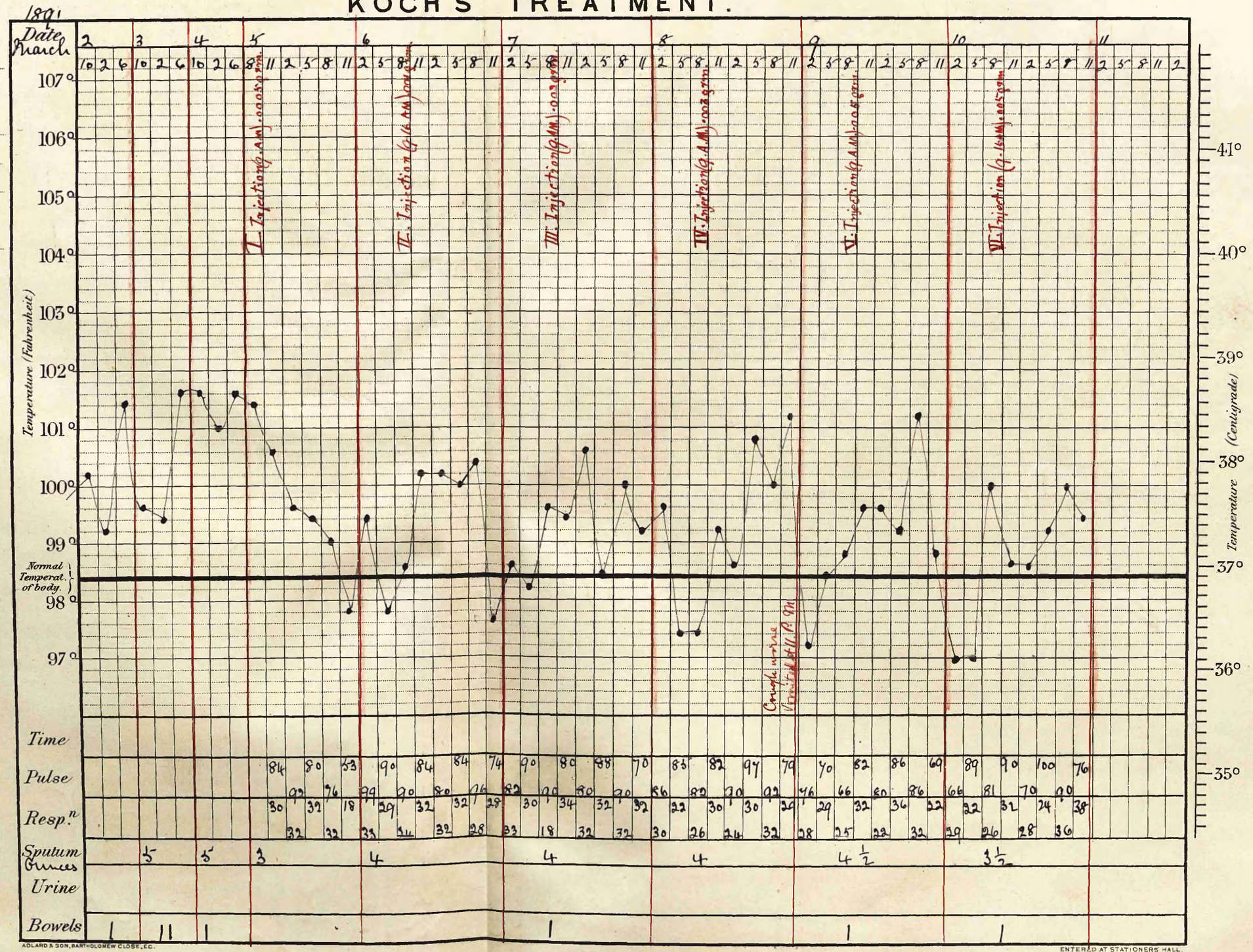
Date of admission: Jan. 21. 1891.

Averages. (Inch 5th to 11th inclusive)

Pulse 82

Resp. 29

Sputum 3 2/7 oz.



KOCH'S TREATMENT.

No. of bed

Name: Robert Dickinson

Age: 32

Occ.: Machine knife maker.

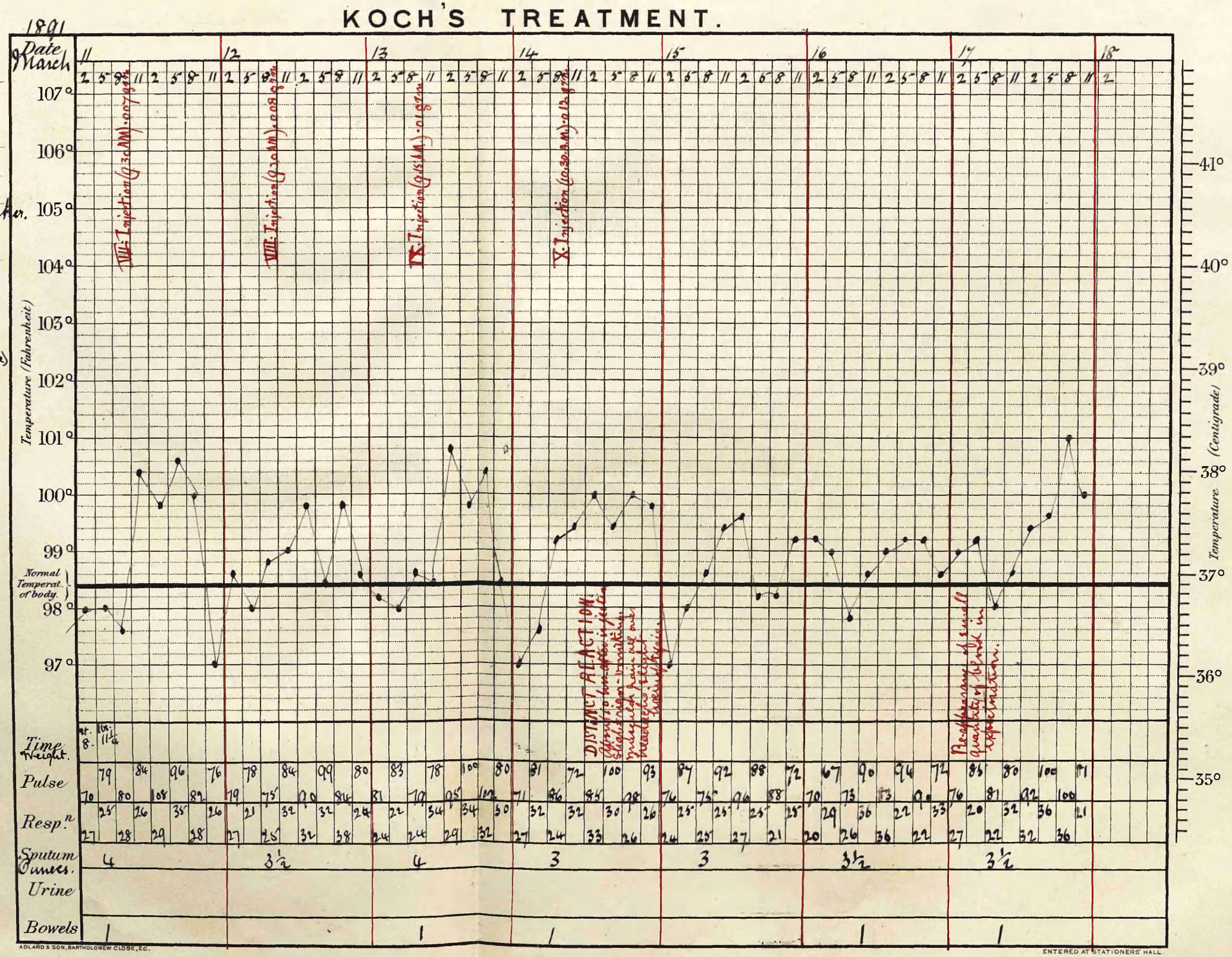
Date of admission: Jan. 21. 1891.

Averages (11th to 14th inclusive)

Pulse 85

Resp. 23

Sputum 3½ oz



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

No. of bed

Name: Robert Dickinson

Age: 32

Occ. Machinist & upholsterer

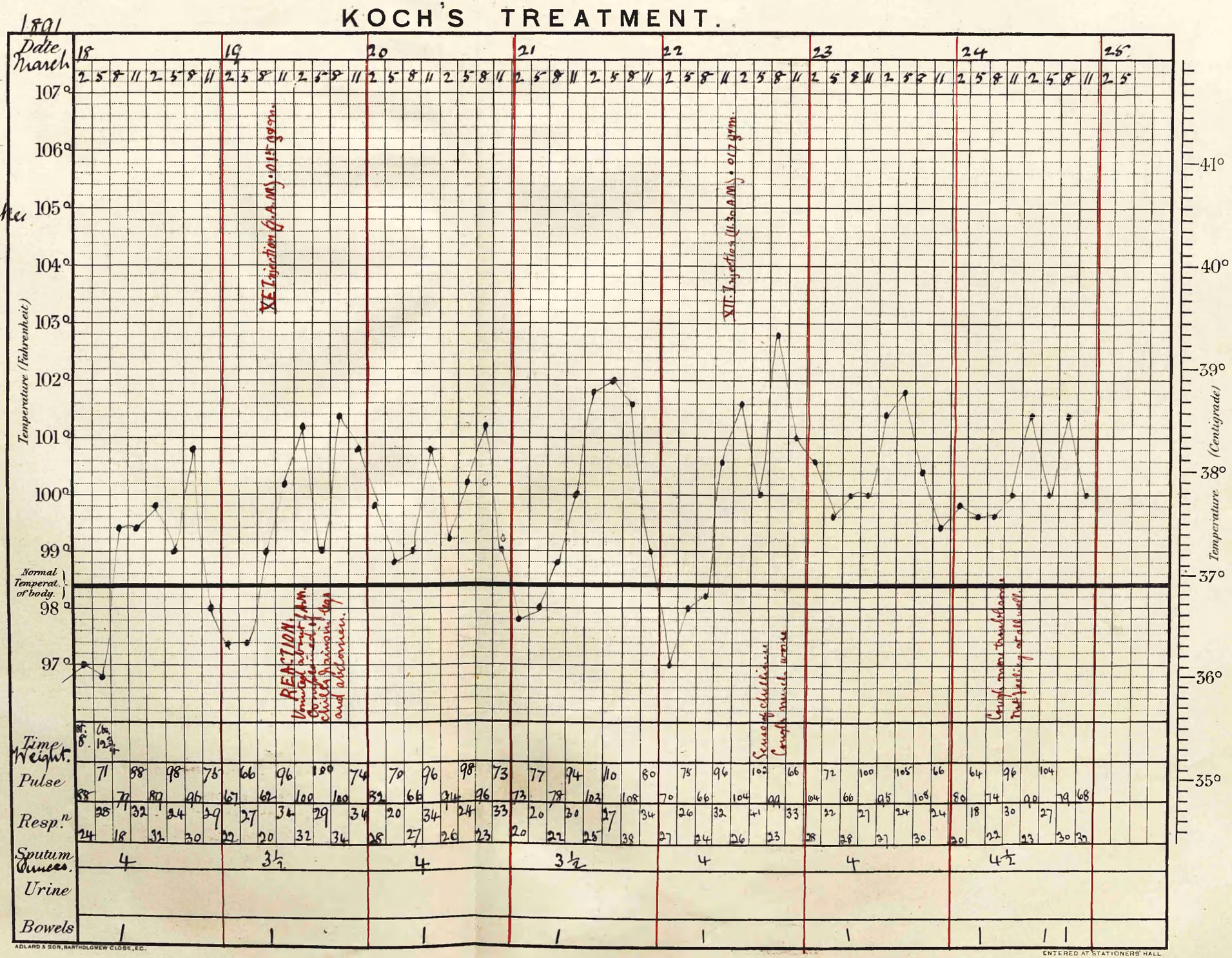
Date of admission: January 21. 1891.

Averages (18th to 24th)

Pulse 83

Resp 24

Sputum 4 oz (nearly)



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

No. of bed

Name: Robert Dickinson

Age: 32

Occ.: Machine knife maker.

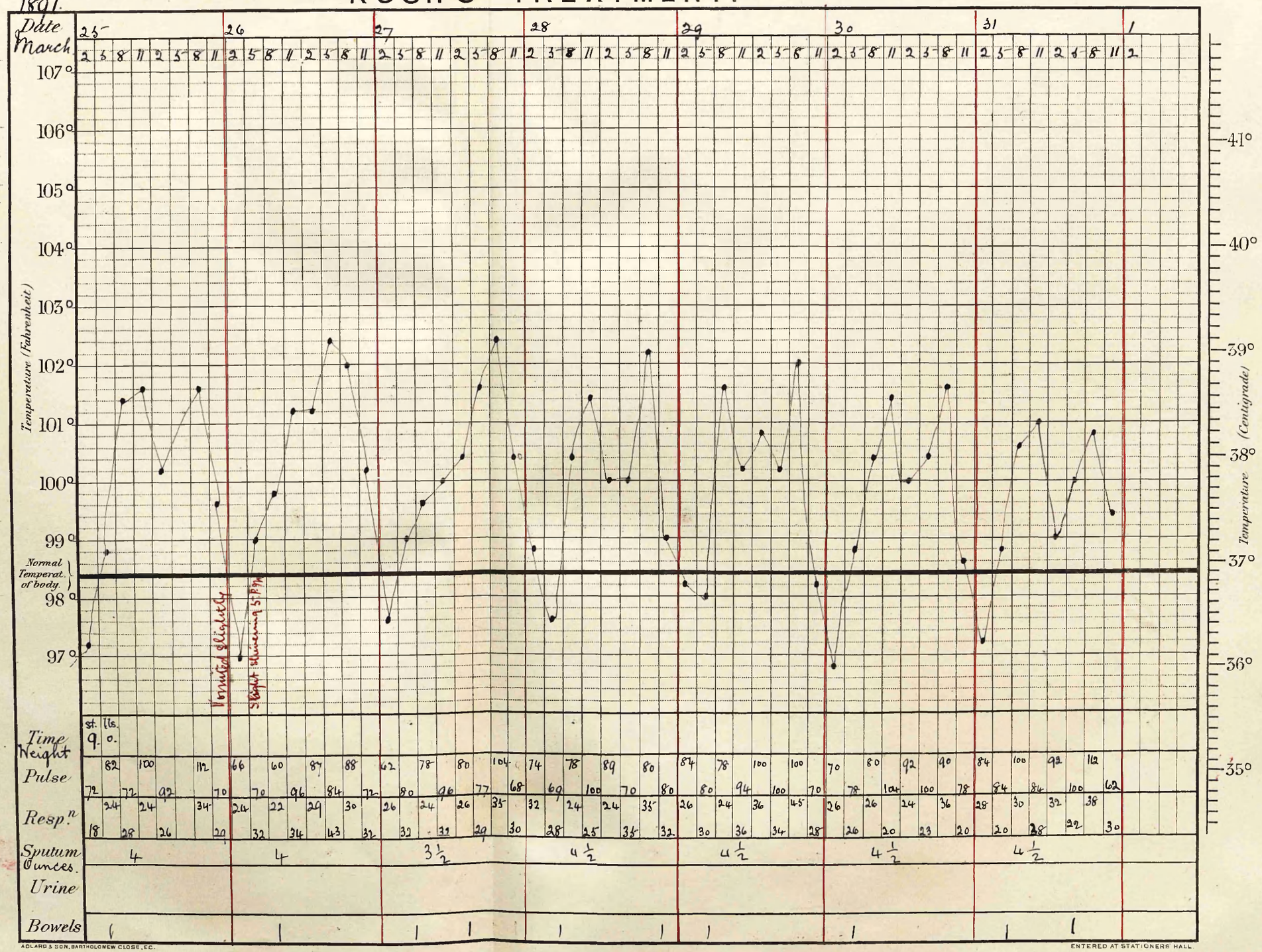
Date of admission: January 21. 1891.

Averages (25th to 31st)

Pulse 86

Resp 28

Sputum 4 1/4 oz.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

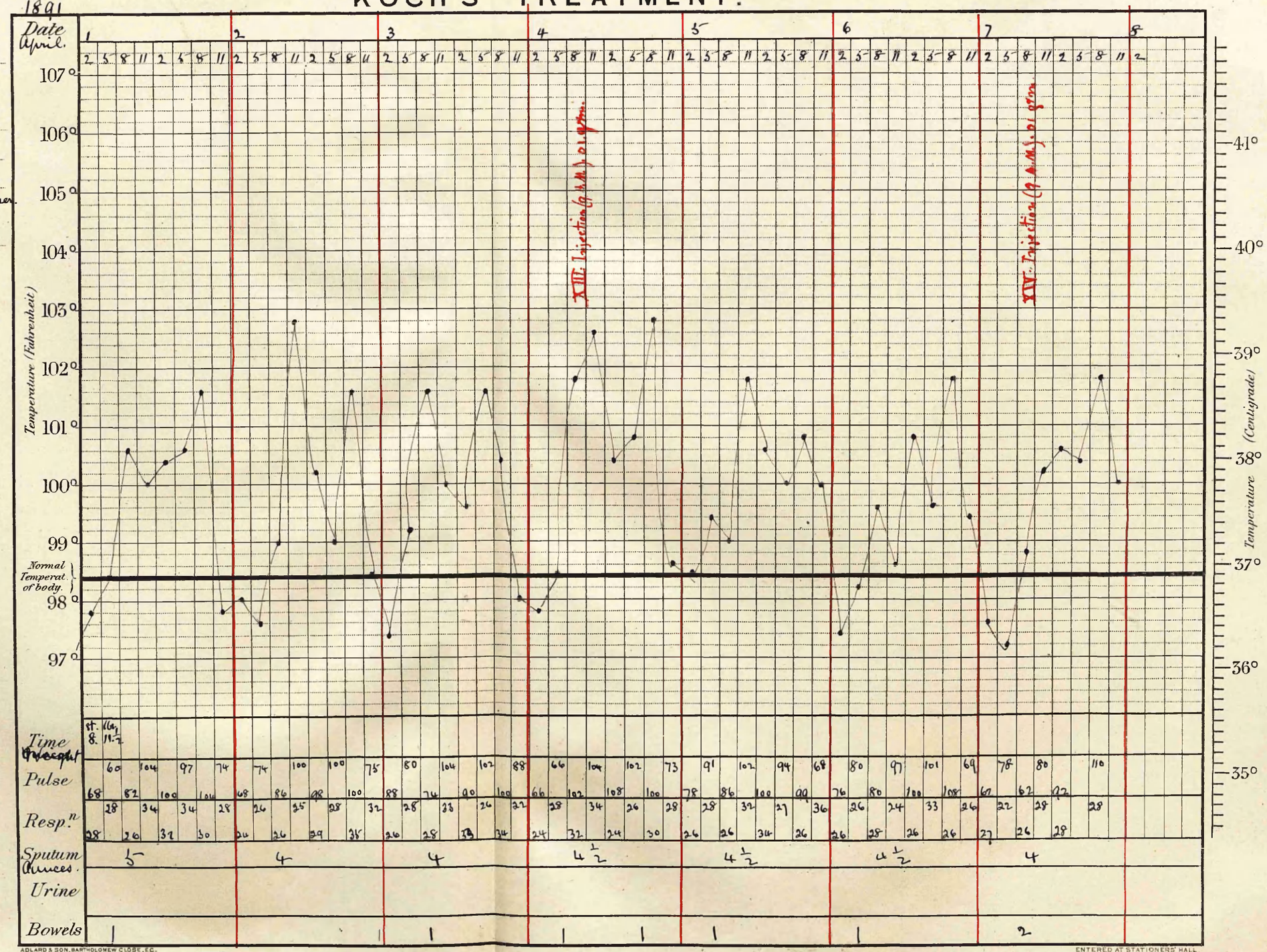
No. of bed

Name: Robert Dickinson

Age: 32

Occ. Machine knife maker.

Date of admission: January 21. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

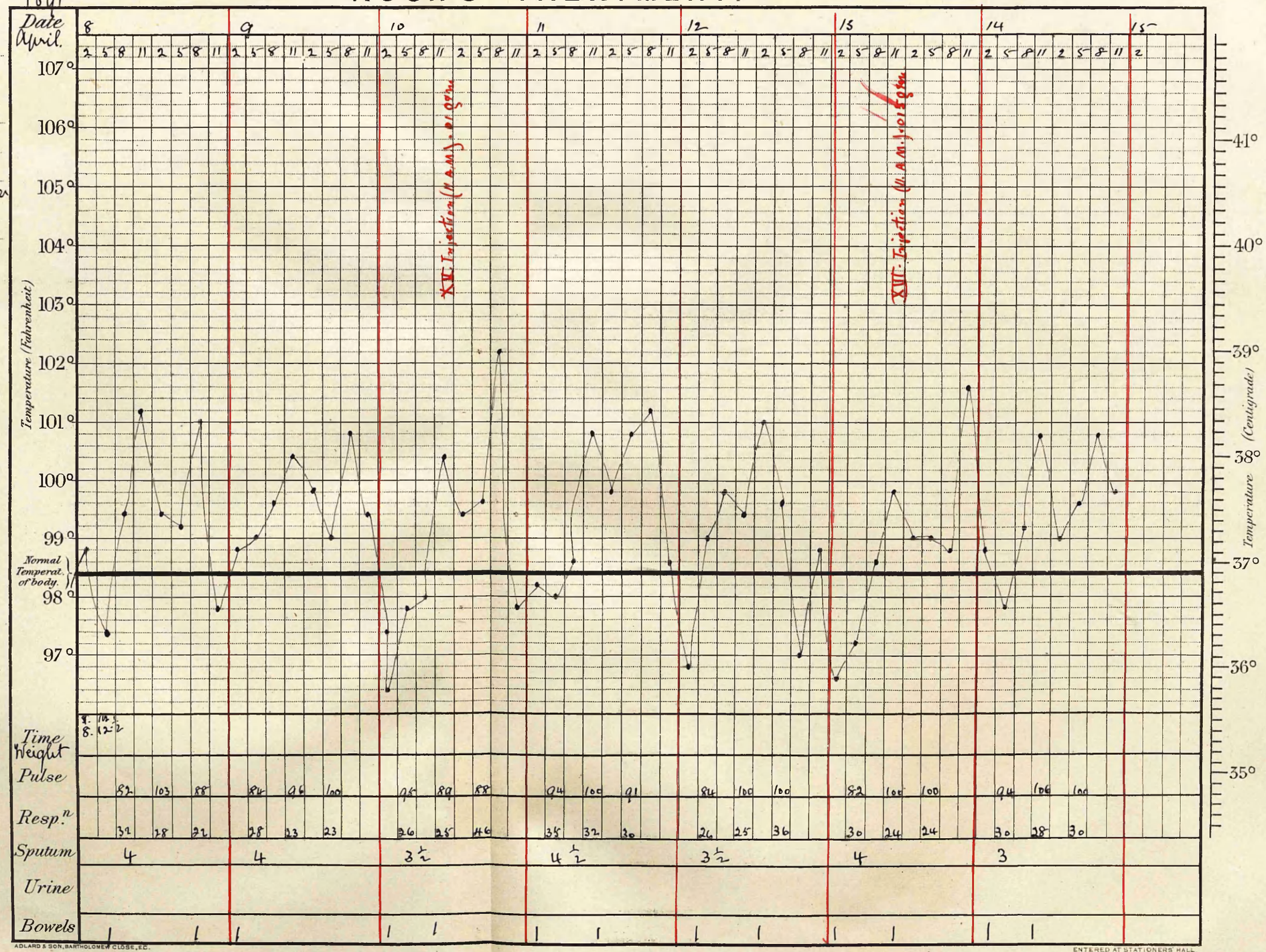
No. of bed

Name: Robert Dickinson

Age: 32

Occ.: Machine knife maker

Date of admission: January 21. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

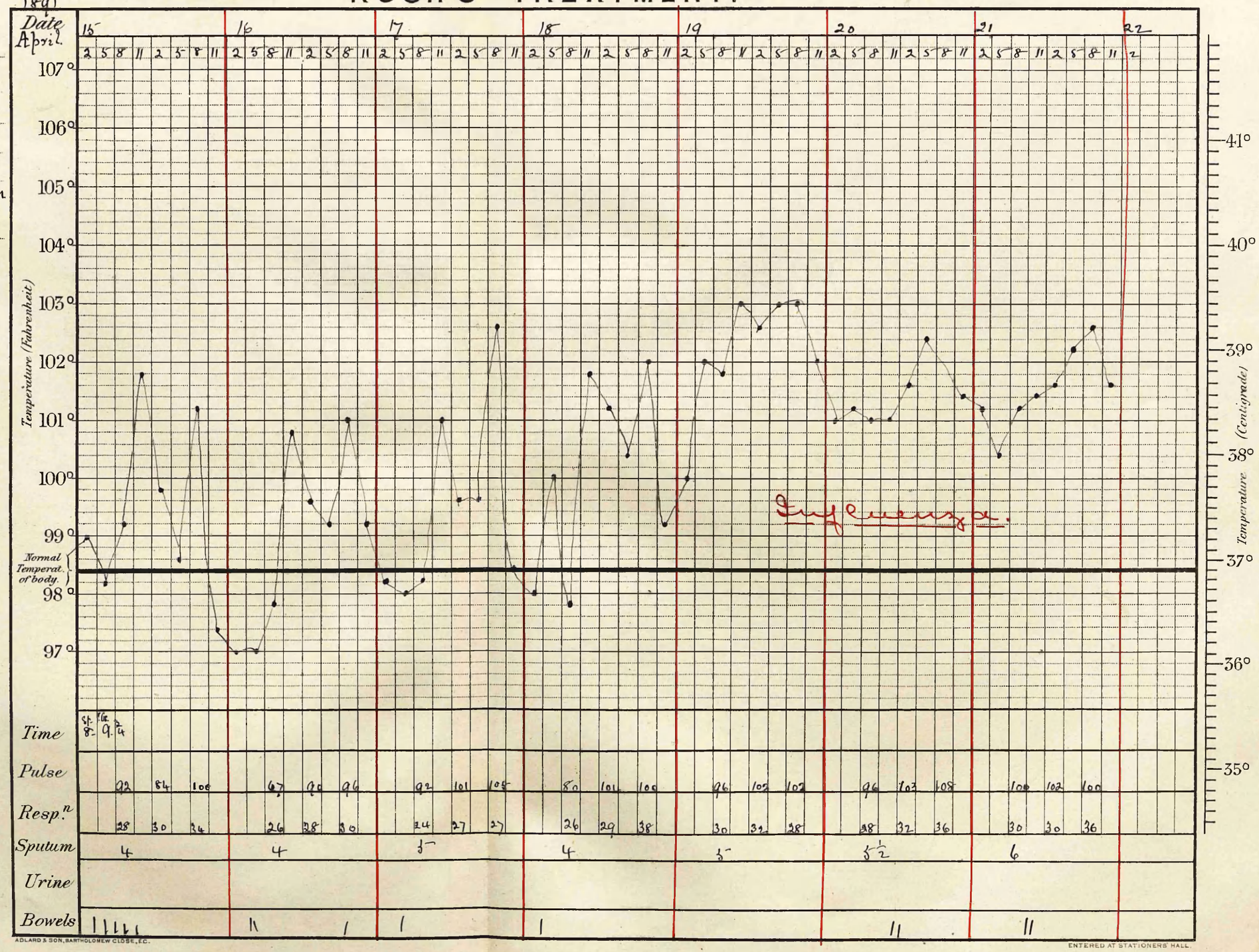
No. of bed

Name: Robert Dickinson

Age: 32

Occ. Machine Instrumentmaker

Date of admission: January 21. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

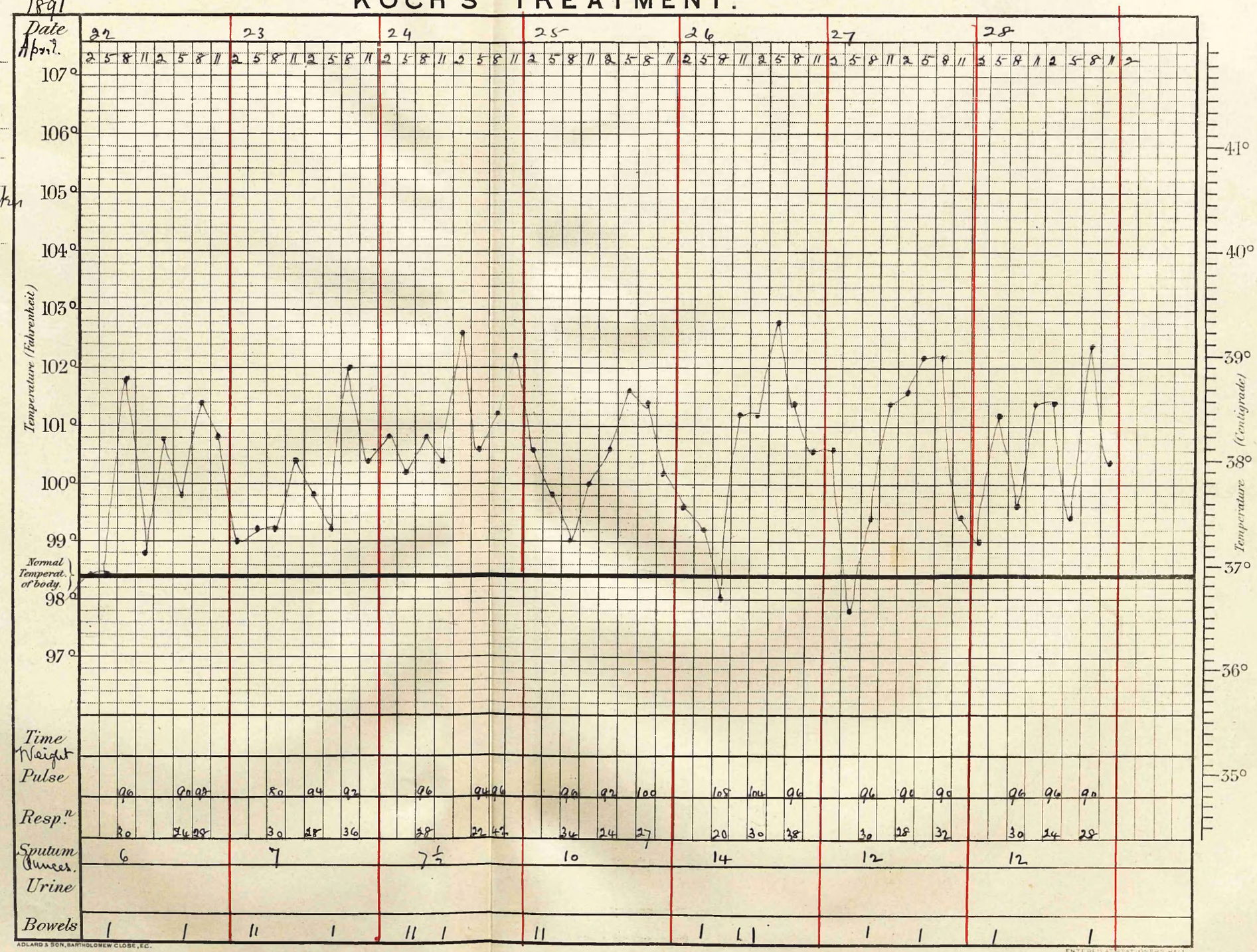
No. of bed

Name: Robert Dickinson

Age: 32

Occ.: Machine Compositor

Date of admission: January 21. 1891.



KOCH'S TREATMENT.

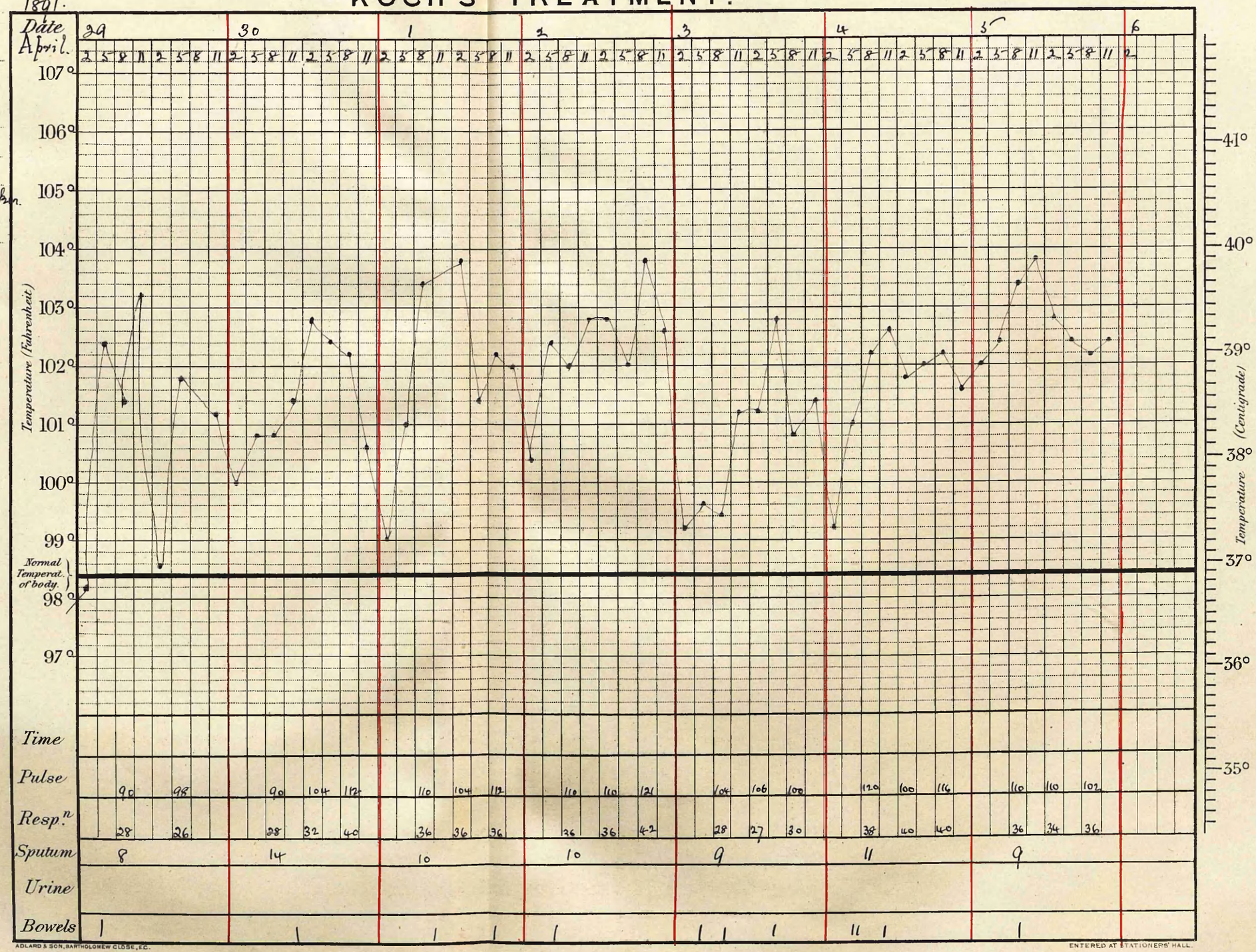
No. of bed

Name: Robert Dickinson

Age: 32

Occ. Machine knife maker.

Date of admission: January 21. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

1891.

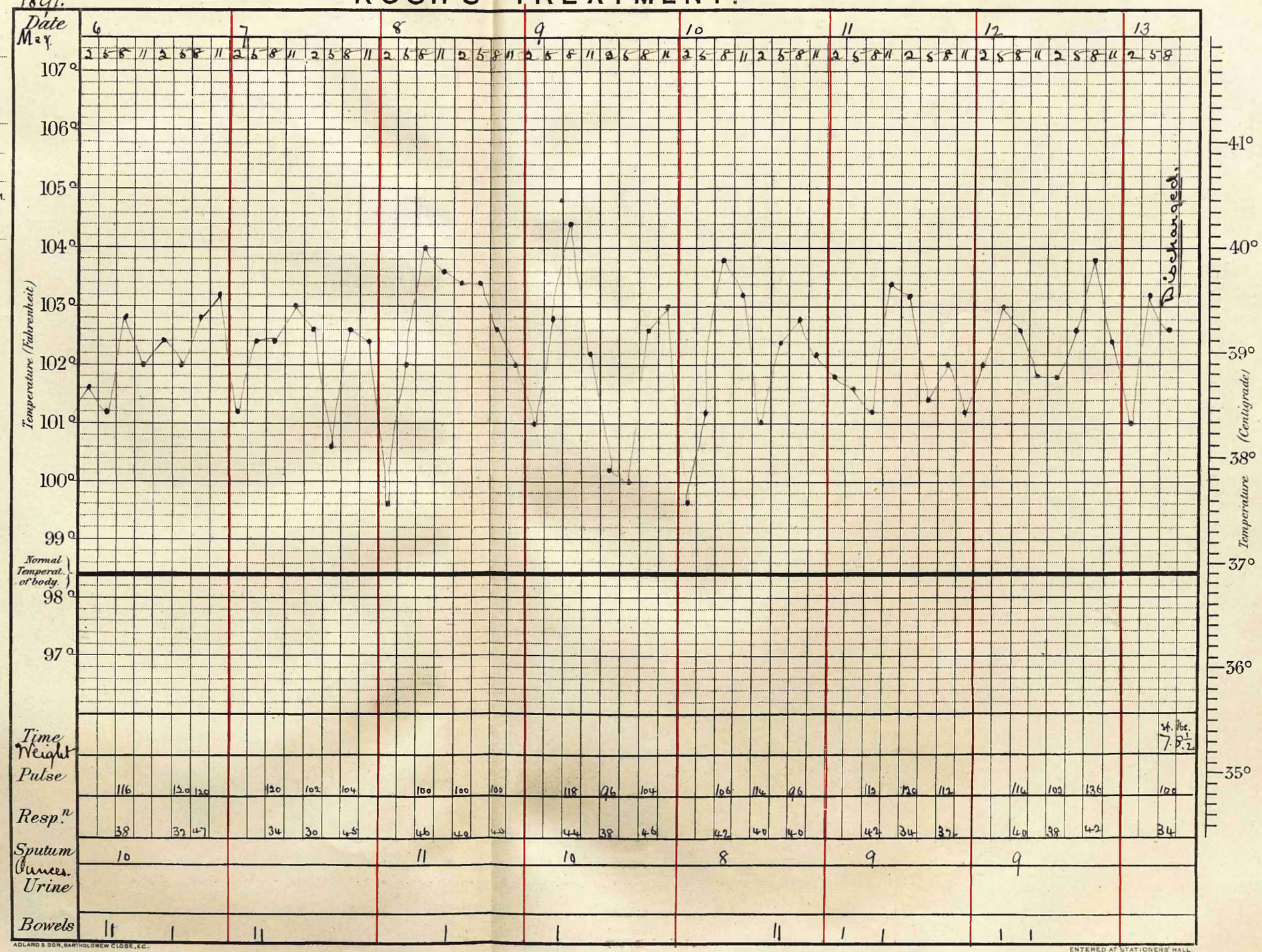
No. of bed

Name: Robert Dickinson

Age: 32

Occ. Machine knife maker.

Date of admission: January 21. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

No. of bed

Name { H. J. Shirley

Age 25

Occ. Miner

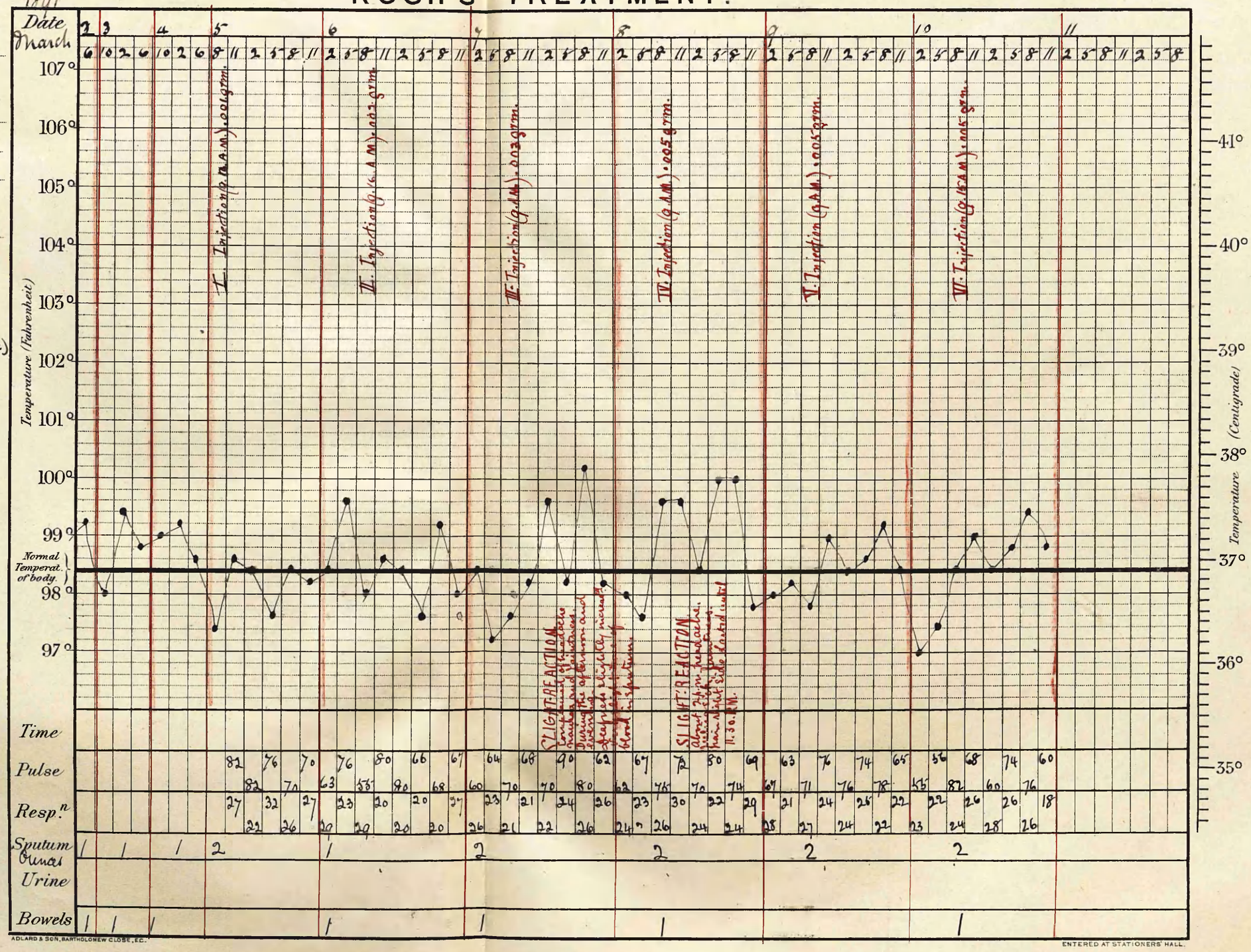
Date of admission December 24 1890.

Averages. (5th to 8th inclusive)

Pulse 42

Resp 24.

Sputum 1 4/4 oz.



KOCH'S TREATMENT.

No. of bed

Name: Henry J. Shirley.

Age: 25.

Occ: Miner.

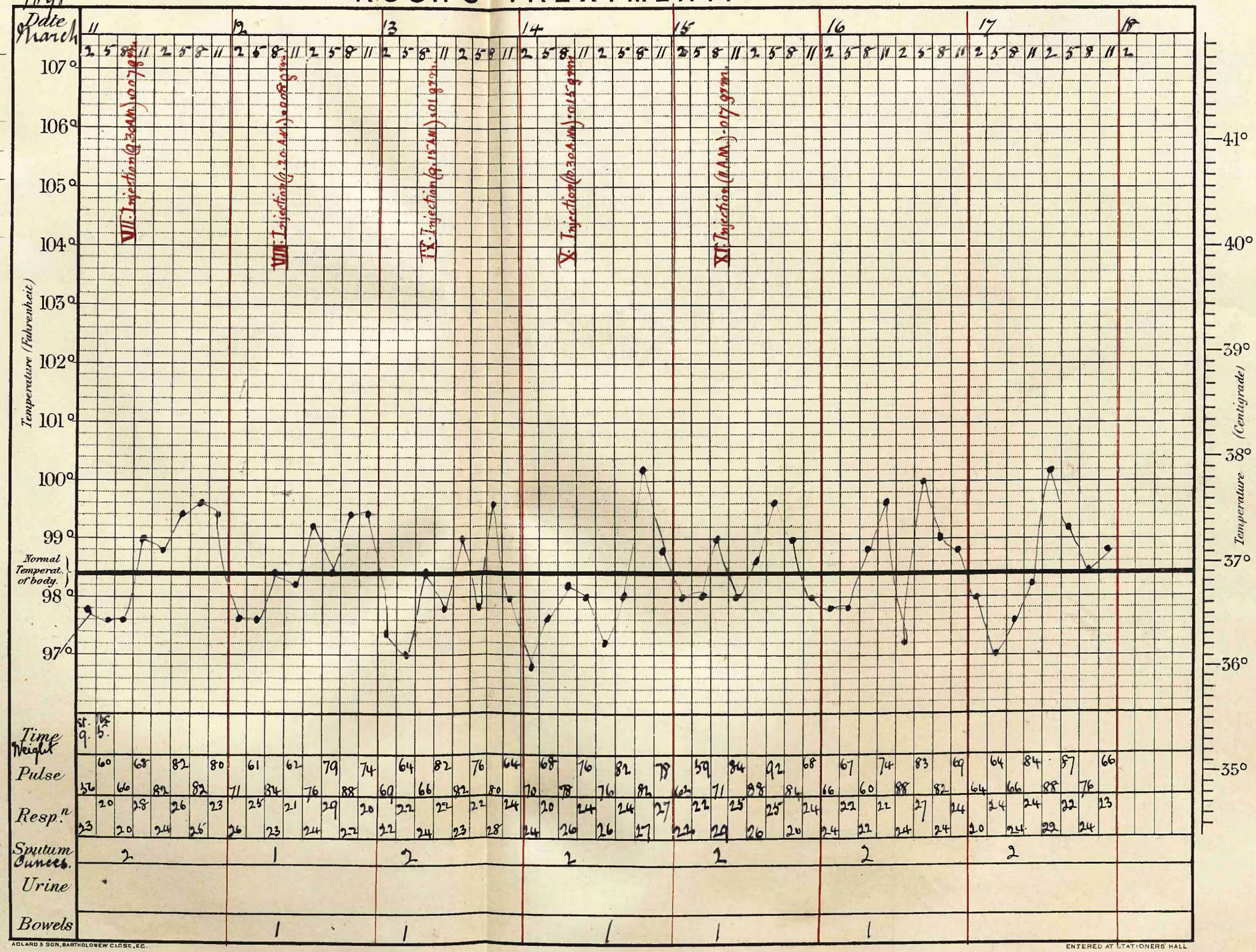
Date of admission: Dec. 24. 1890.

Averages (11th to 14th)

Pulse 45

Resp 23.

Sputum 1 6/7 ozs



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

No. of bed

Name { Henry T. Shirley

Age 25

Occ. Miner.

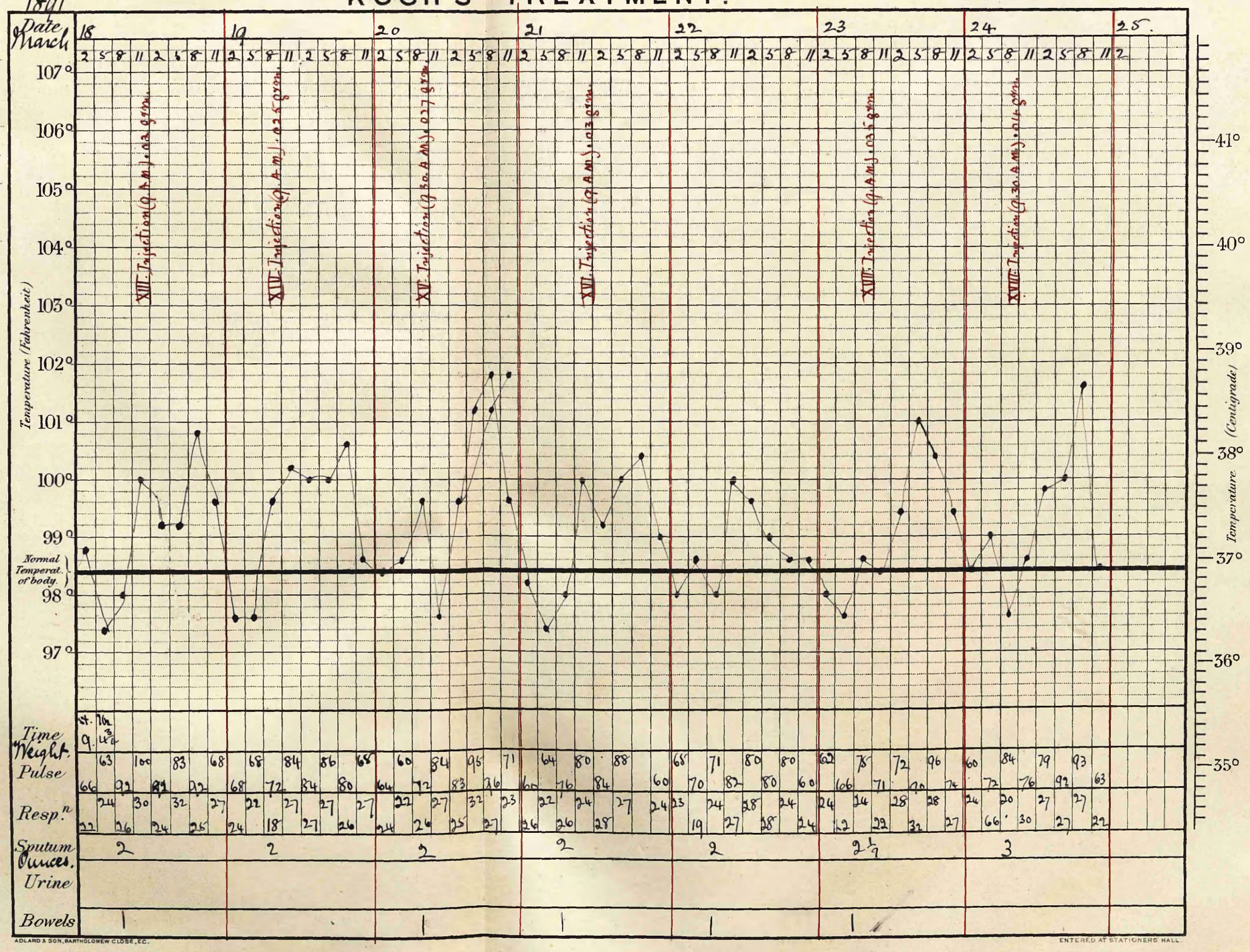
Date of admission Dec. 24. 1890.

Averages (18 to 24th)

Pulse 44

Resp. 24

Sputum 2 1/3 oz.



KOCH'S TREATMENT.

No. of bed

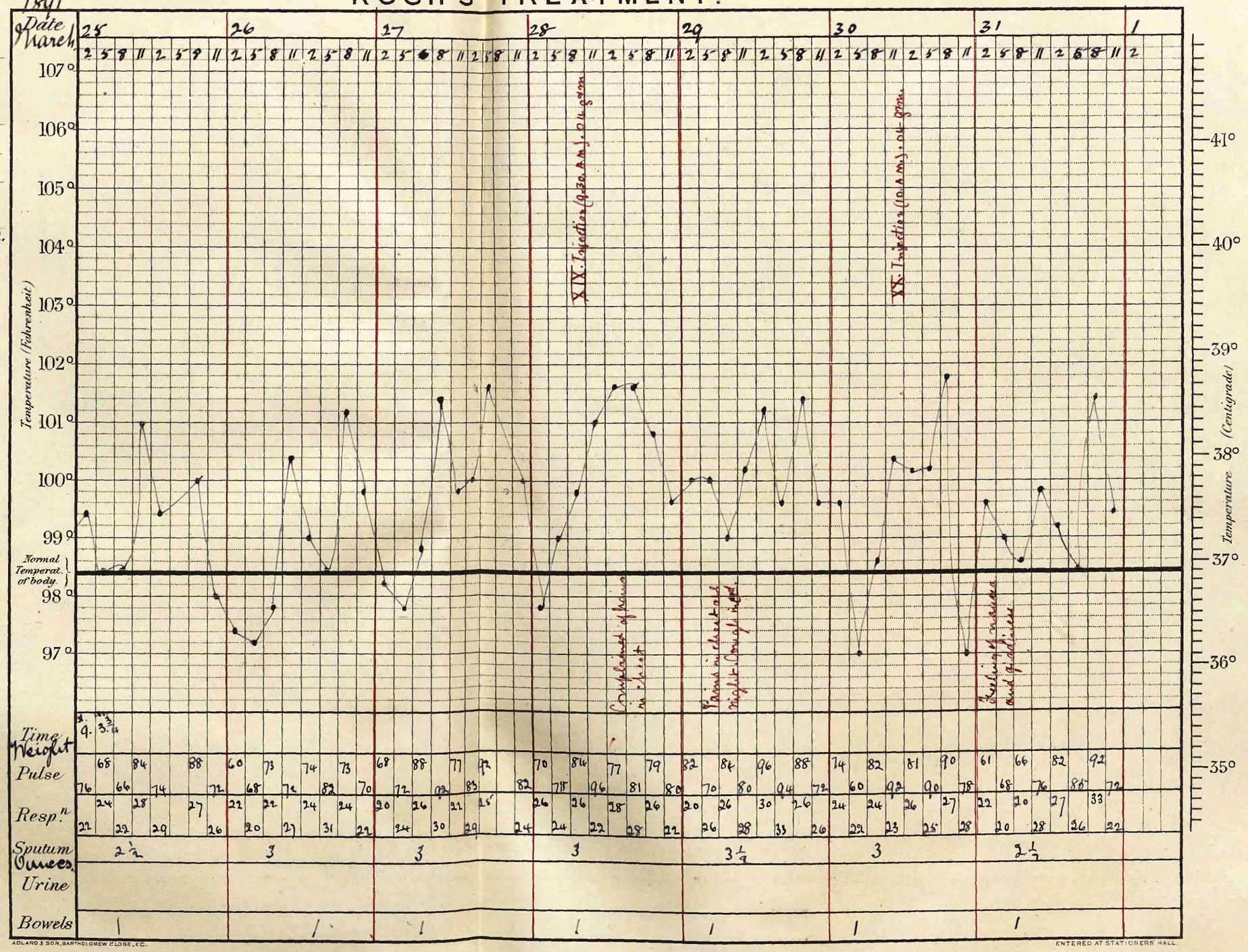
Name: Henry J. Shirley

Age: 25

Occ: Miner.

Date of admission: December 24. 1890.

Averages (25th to 31st)



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

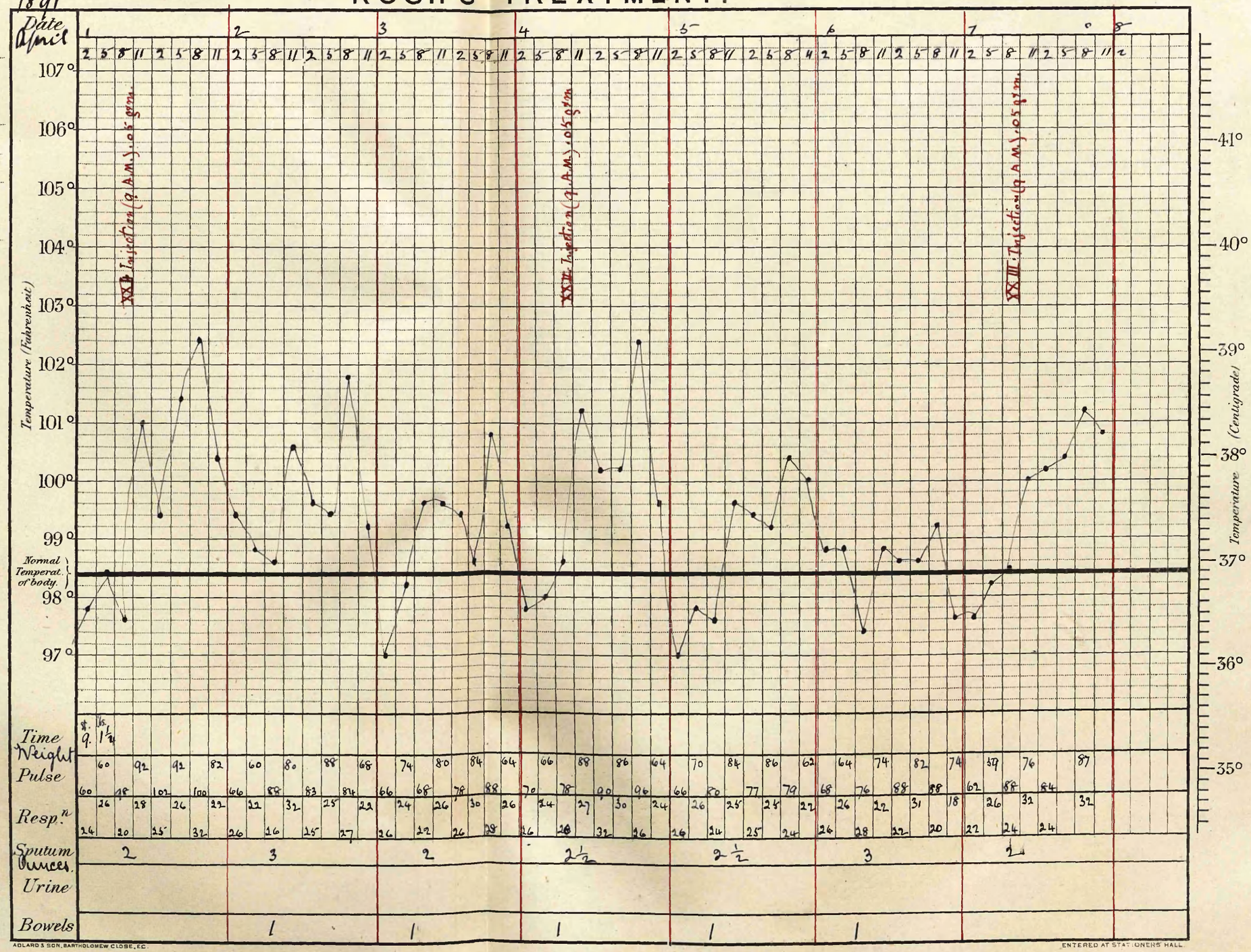
No. of bed

Name: Henry J. Shirley

Age: 25

Occ. Miner

Date of admission: Dec. 24. 1890



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

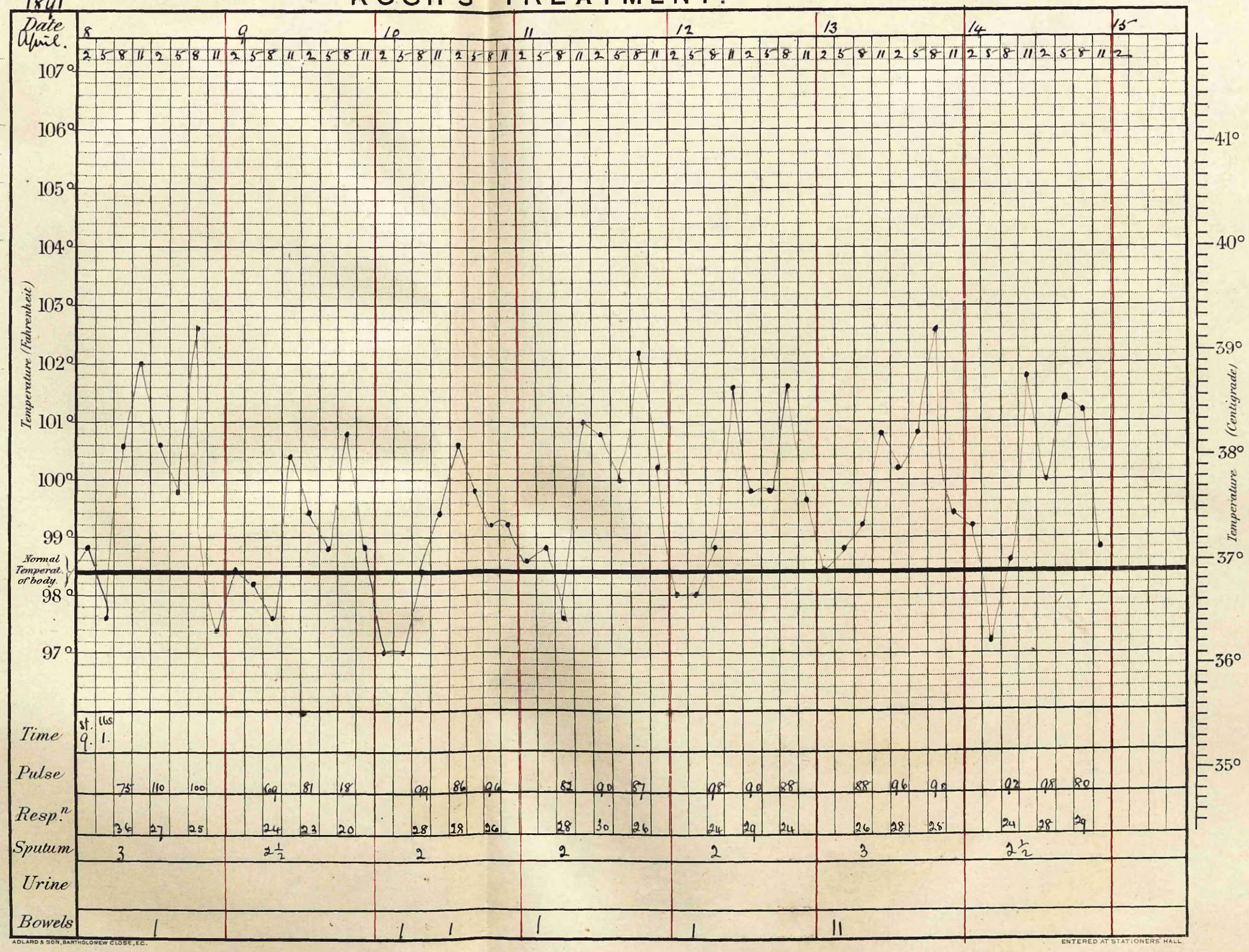
No. of bed

Name: Henry S. Shirley

Age: 25.

Occ. Miner

Date of admission: December 24. 1890



KOCH'S TREATMENT.

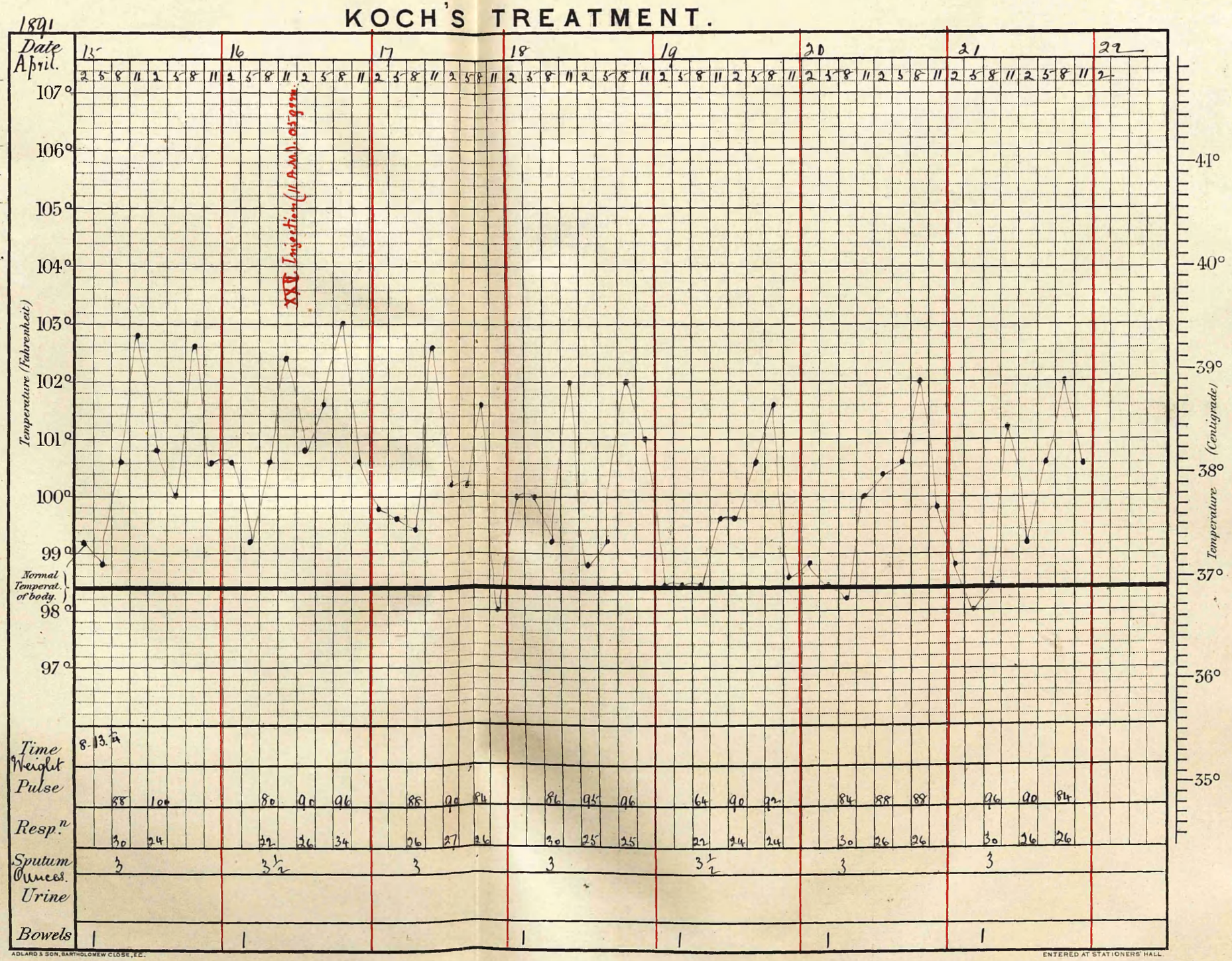
No. of bed

Name: Henry T. Shirley

Age: 25

Occ: Miner

Date of admission: December 24. 1890.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

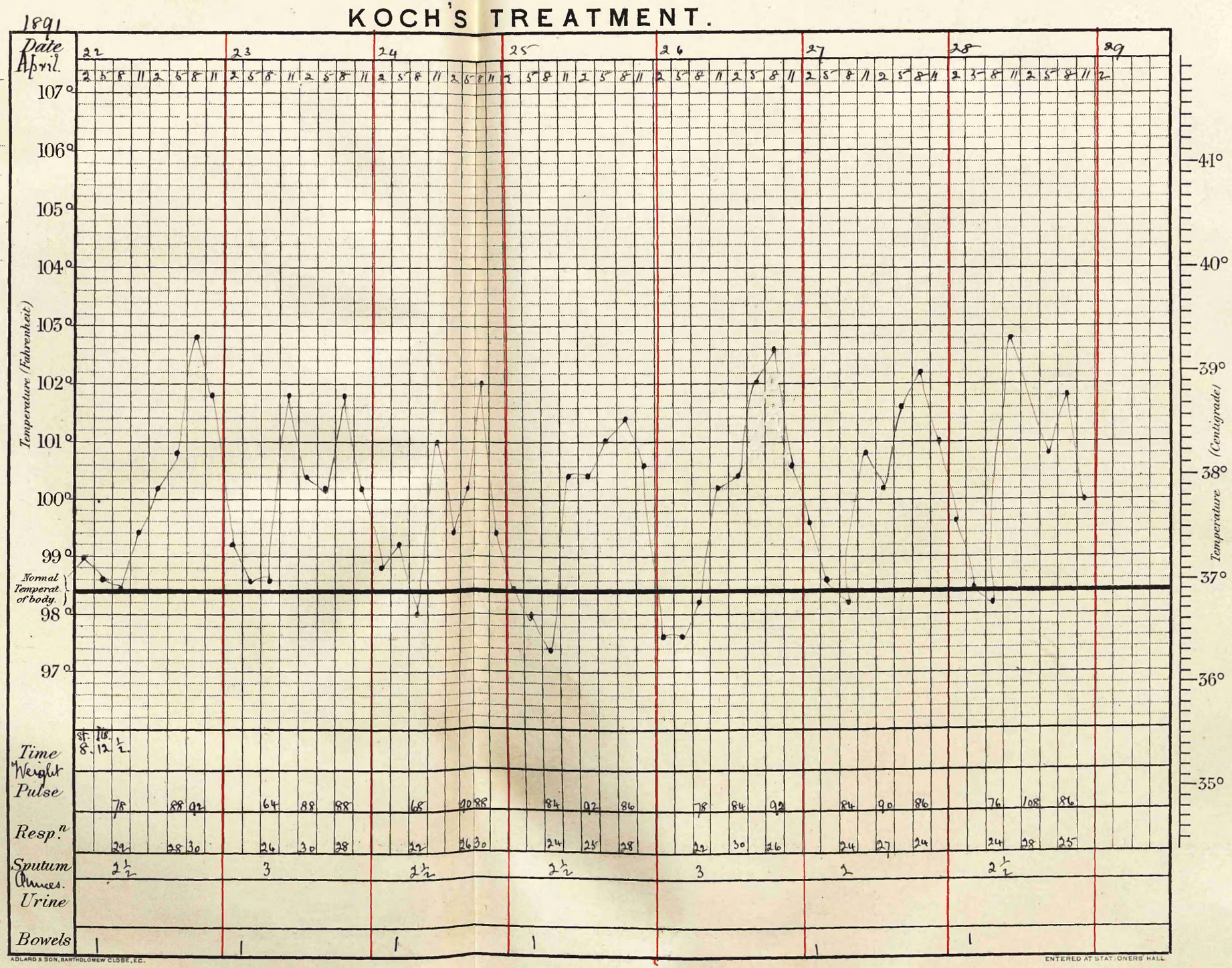
No. of bed

Name: Thos. H. Shirley

Age: 25.

Occ. Miner

Date of admission: December 24. 1890.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

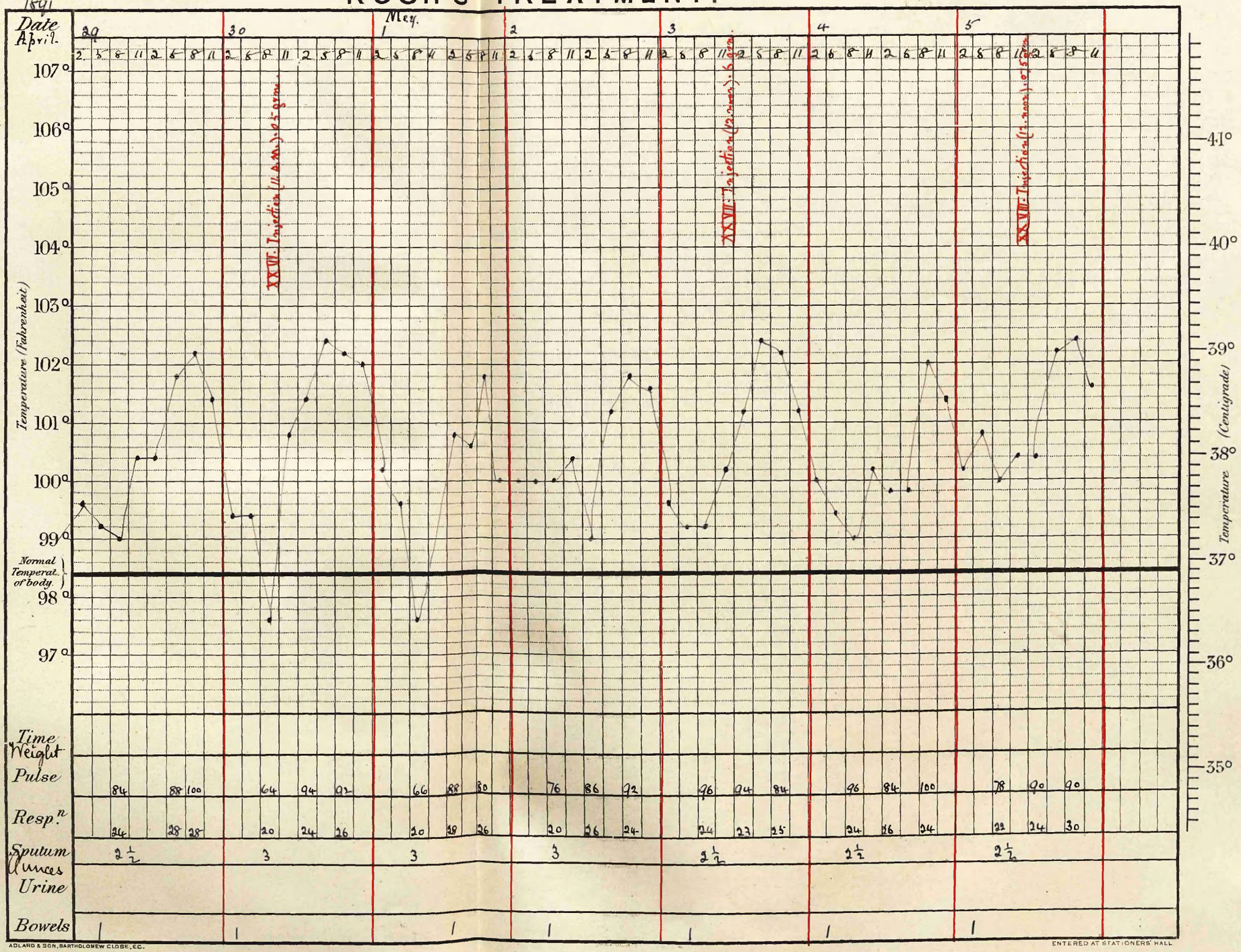
No. of bed

Name { Thos. H. Shirley

Age 25.

Occ. Miner.

Date of admission December 24. 1890.



KOCH'S TREATMENT.

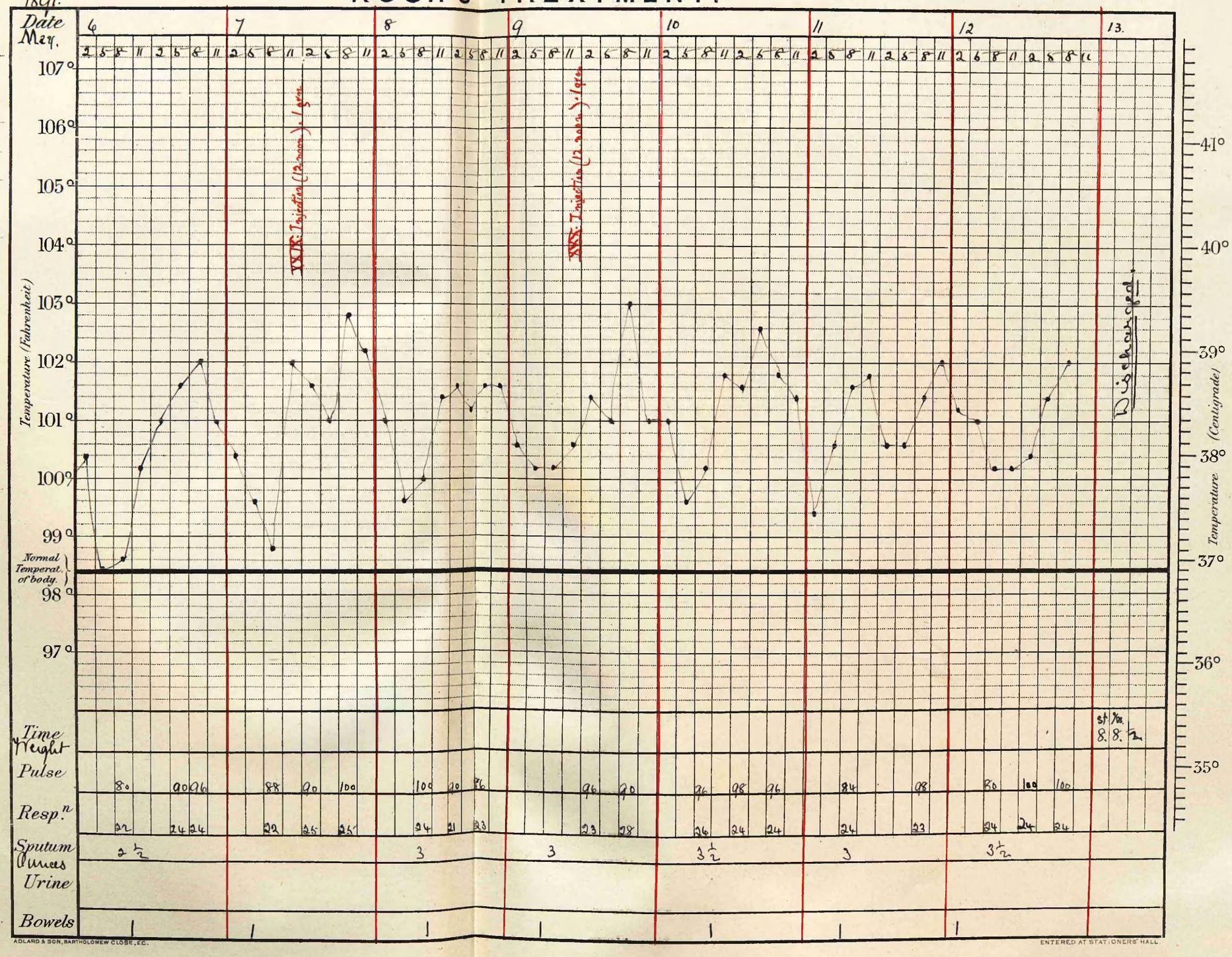
No. of bed

Name { Thos. H. Shirley.

Age 25.

Occ. Miner.

Date of admission December 24. 1890.



KOCH'S TREATMENT.

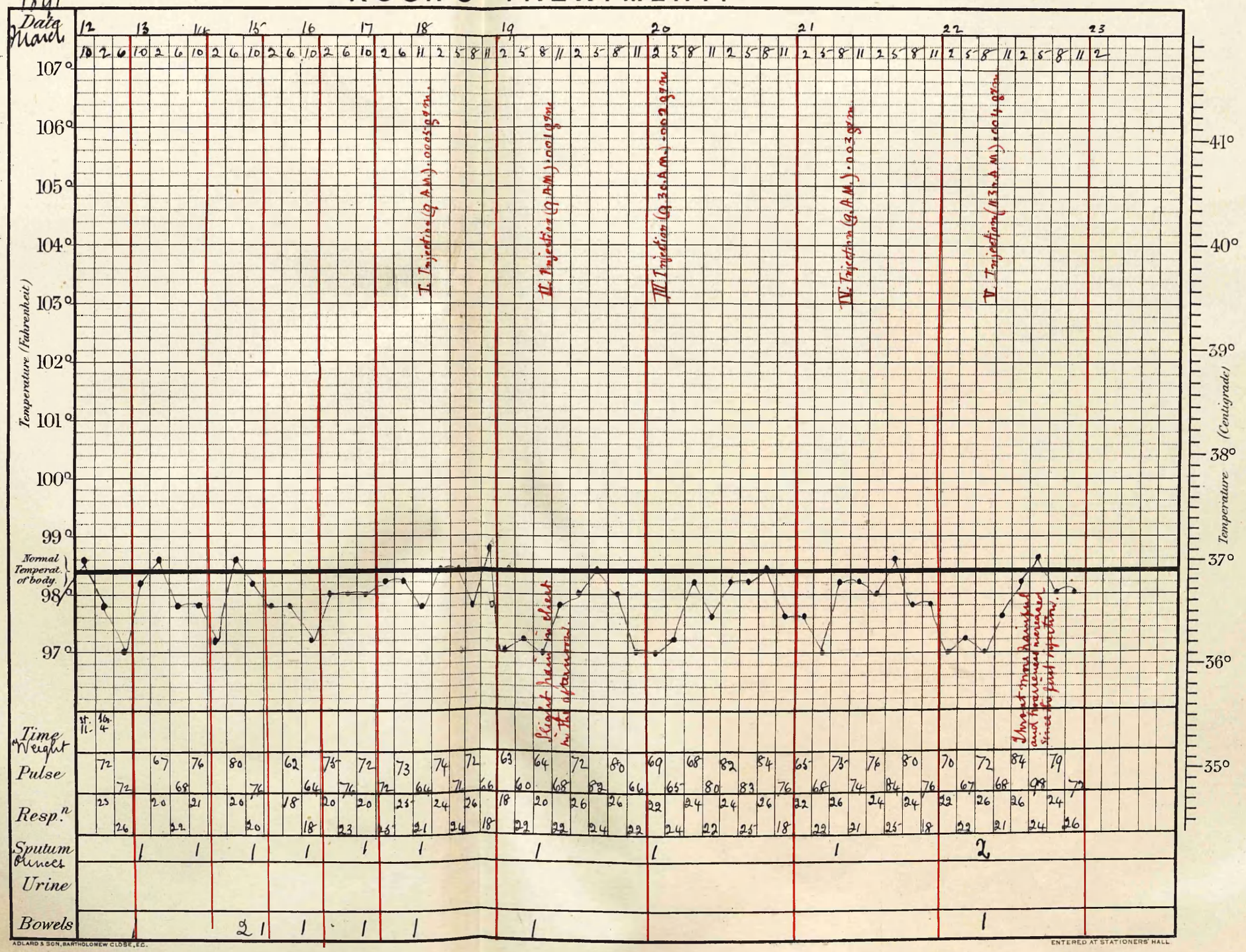
No. of bed

Name: Frank Rocca

Occ. Ice cream maker.

Age: 29

Date of admission: March 12. 1891.



KOCH'S TREATMENT.

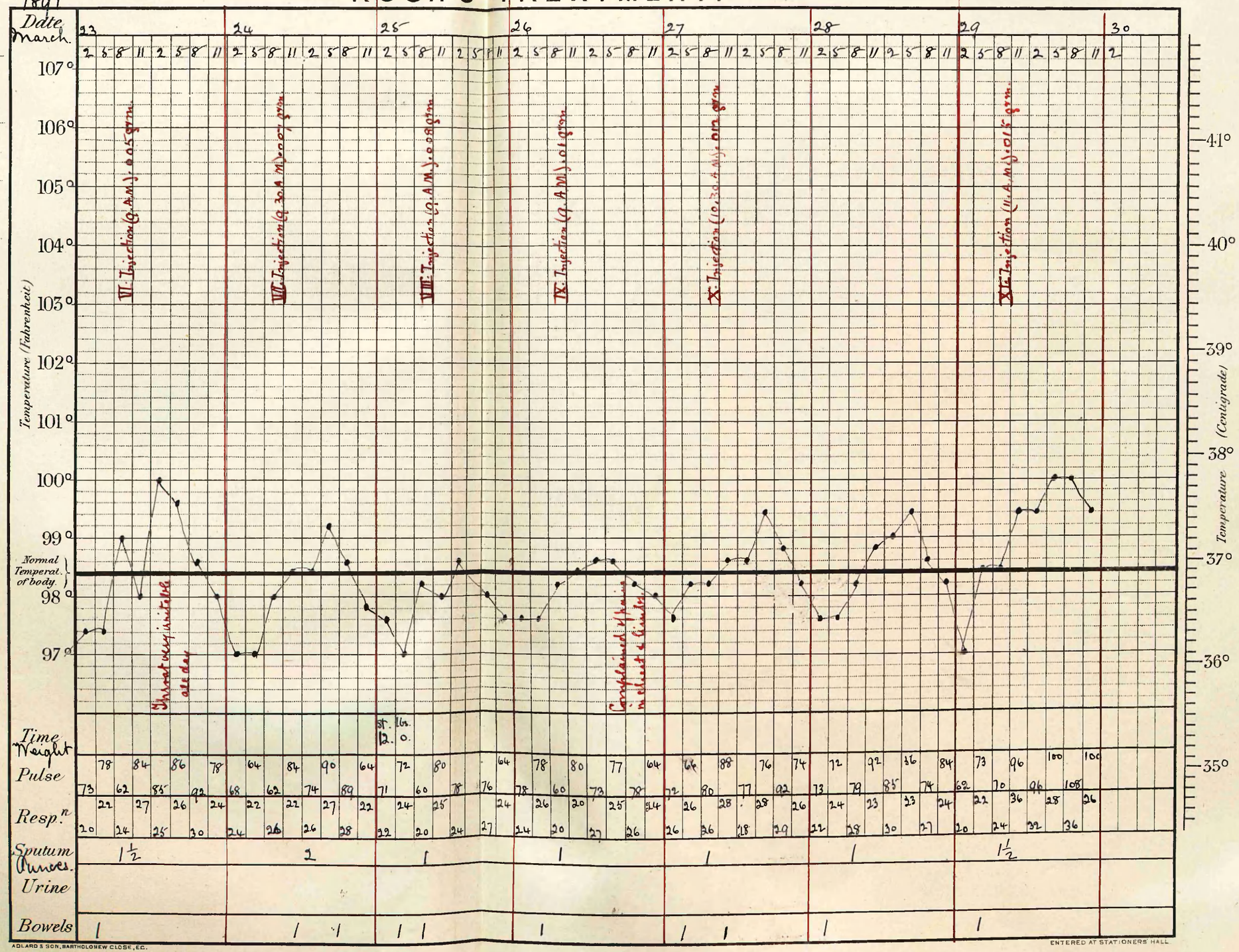
No. of bed

Name: Frank Rocca

Age: 29

Occ.: Ice cream maker

Date of admission: March 12. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

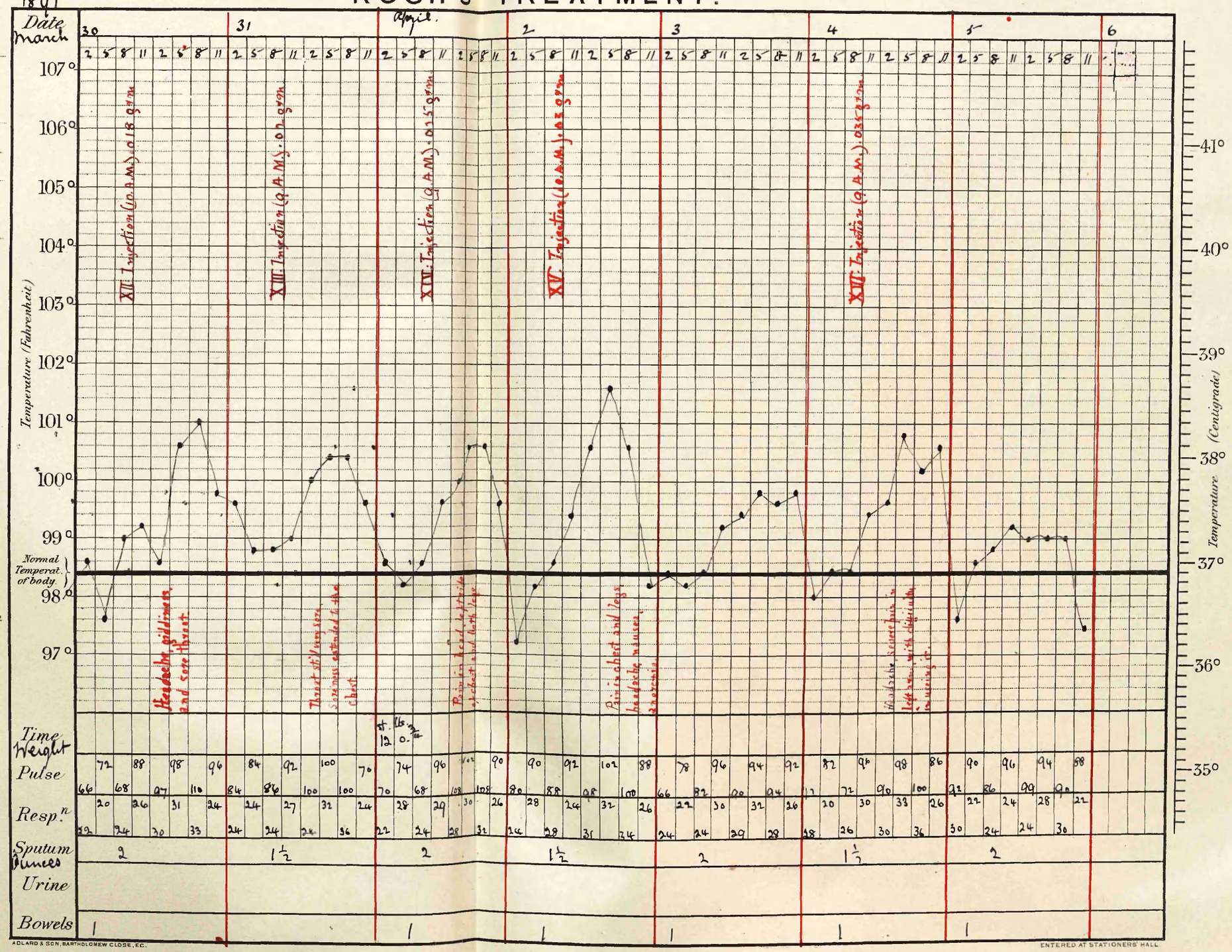
No. of bed

Name: Frank Rocca

Age: 29

Occ. Ice cream maker.

Date of admission: March 12. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

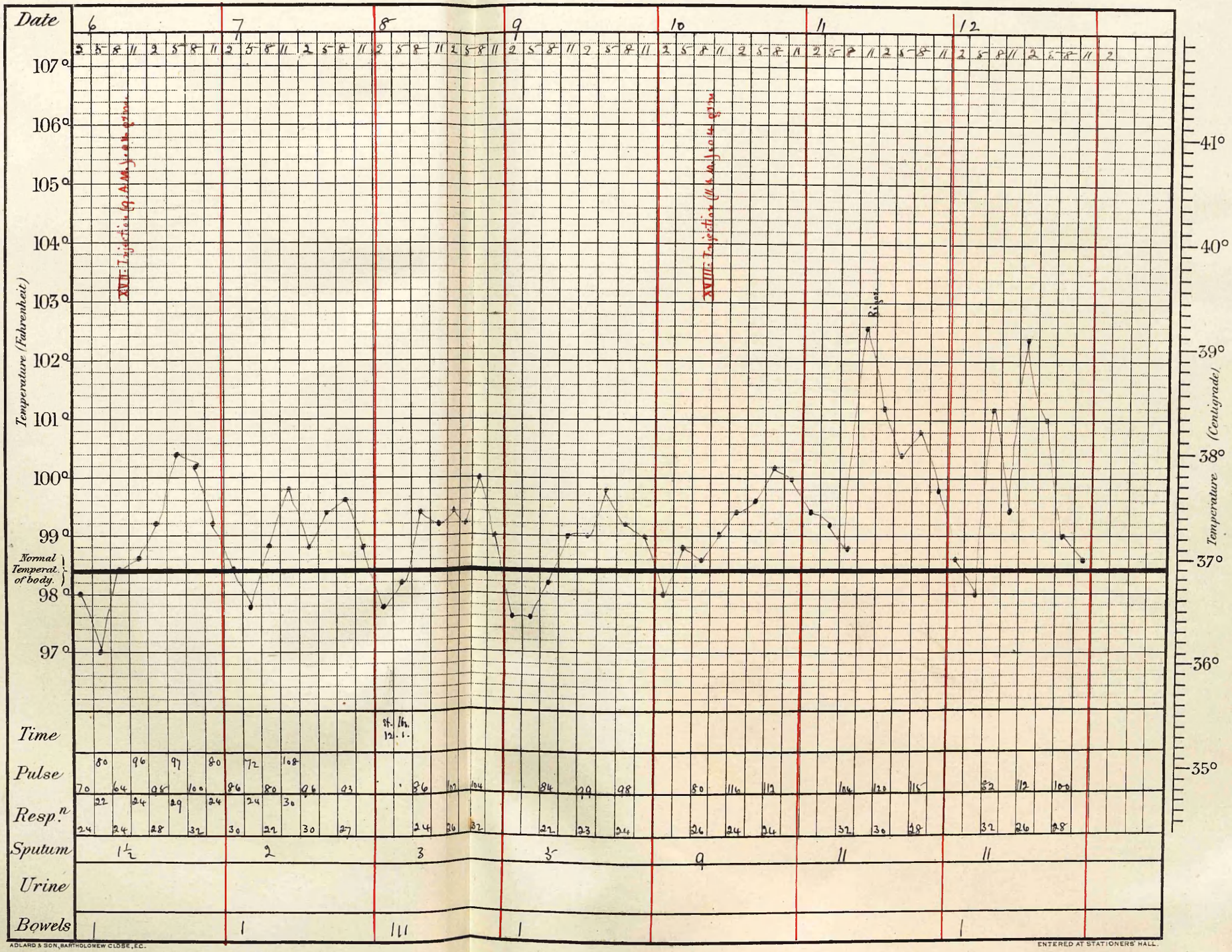
KOCH'S TREATMENT.

No. of bed

Name: Franks Rocca

Age: 29.

Date of admission: Mch 12. 91



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

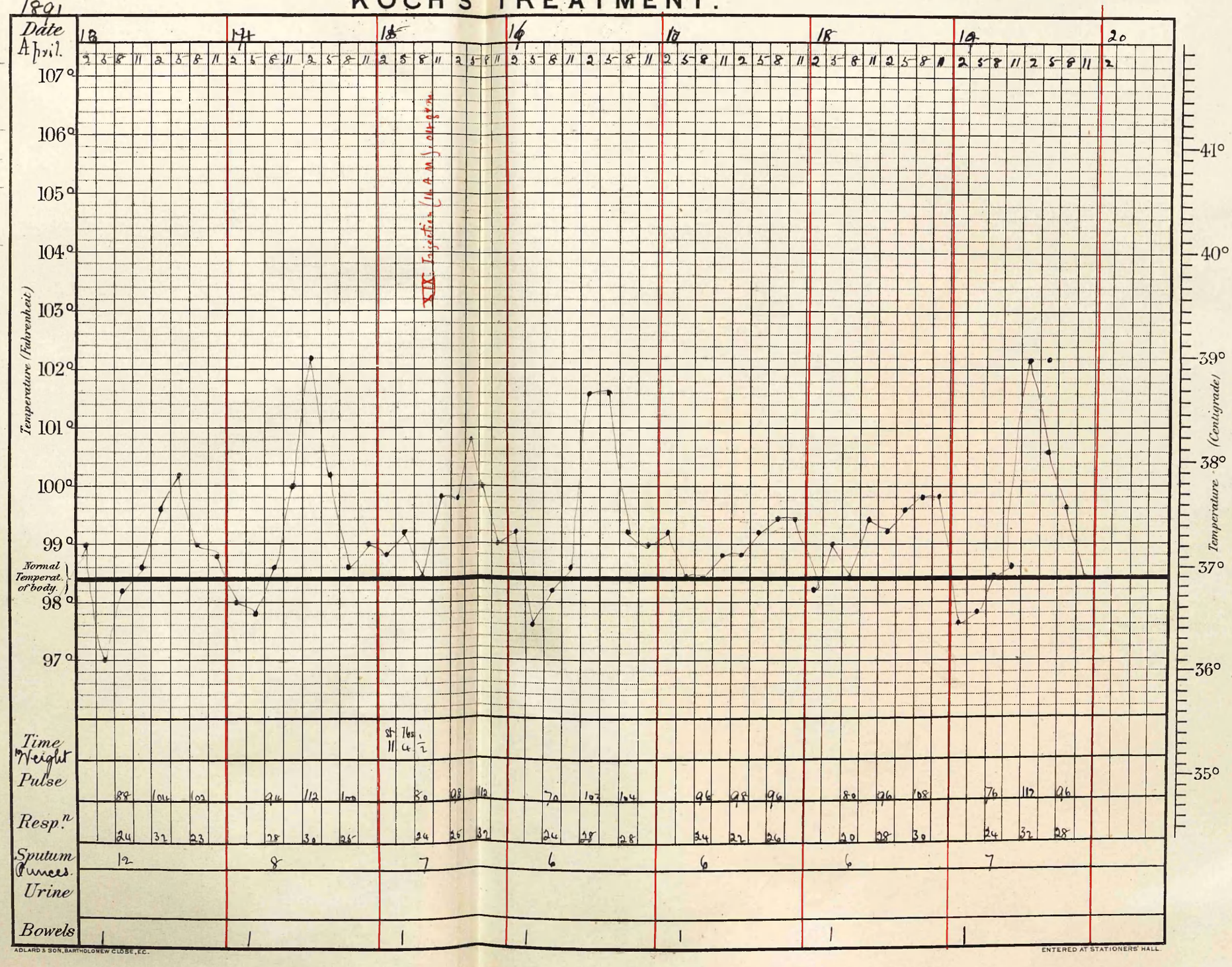
No. of bed

Name: Frank Rocca

Age 29

Occ. Ice cream maker.

Date of admission March 12. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

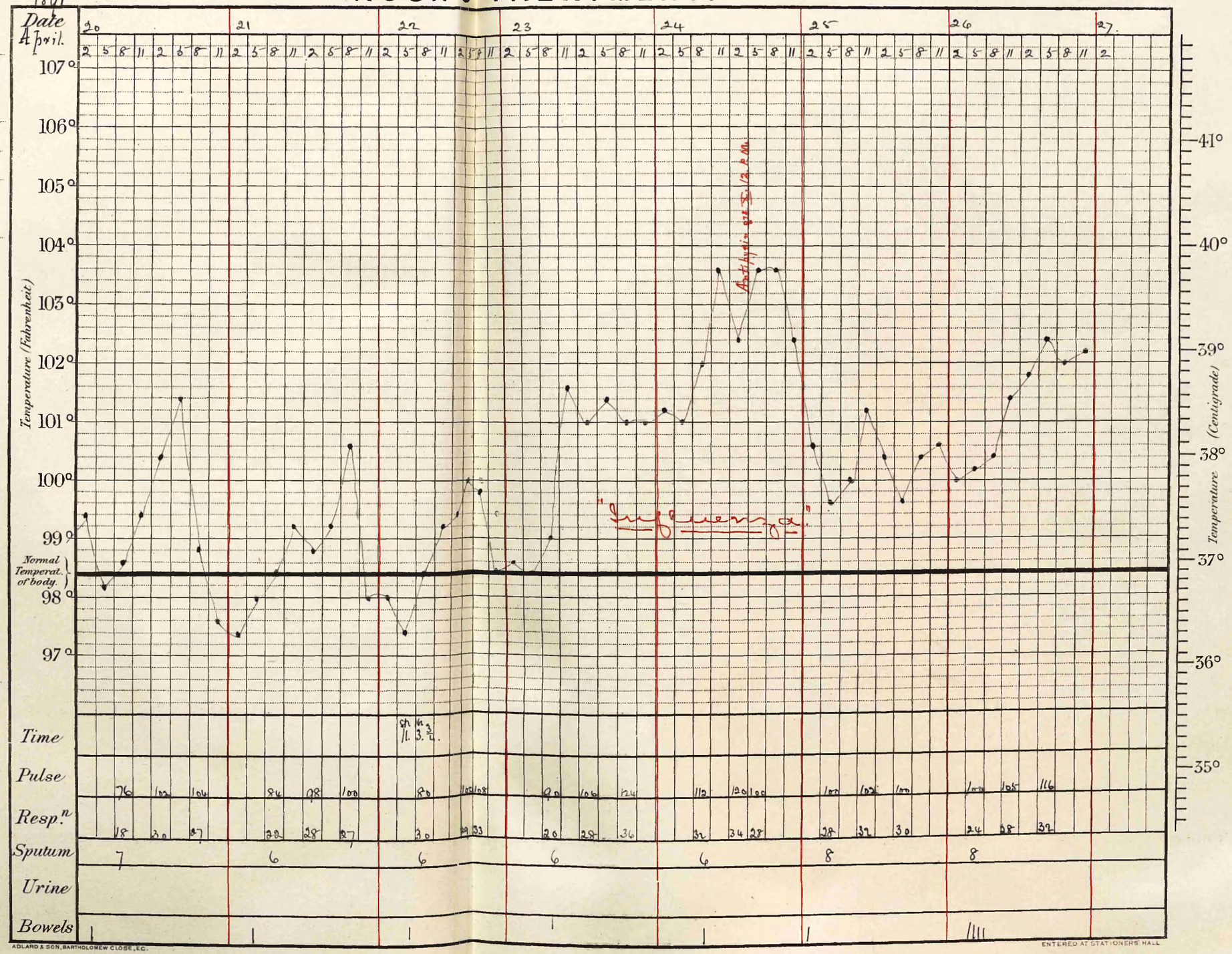
No. of bed

Name: Franch Bocca

Age: 29.

Occ: Ice cream maker

Date of admission: March 12. 1891



KOCH'S TREATMENT.

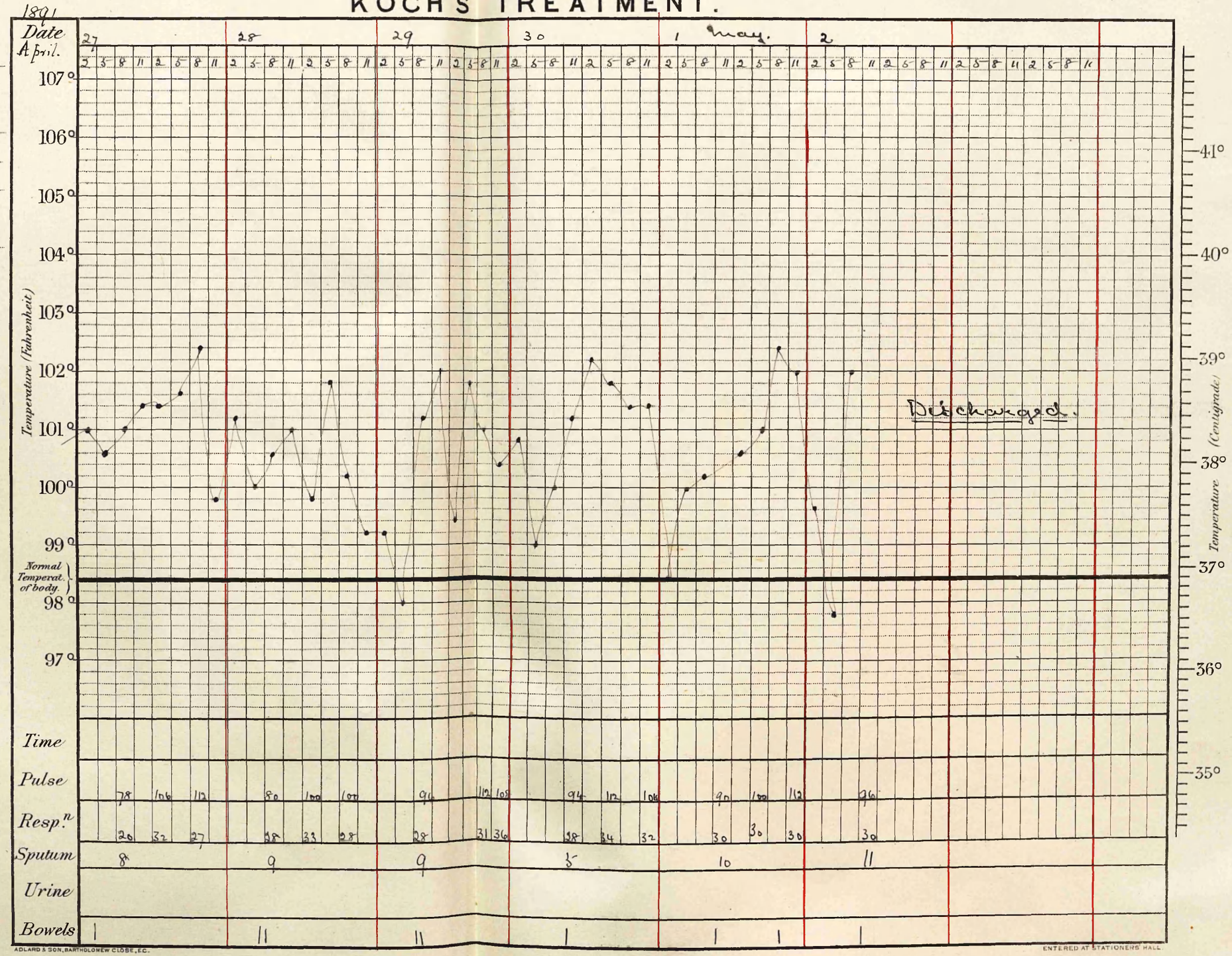
No. of bed

Name: Frank Rocca

Age: 29

Occ.: Ice cream maker

Date of admission: March 10. 1891.



KOCH'S TREATMENT.

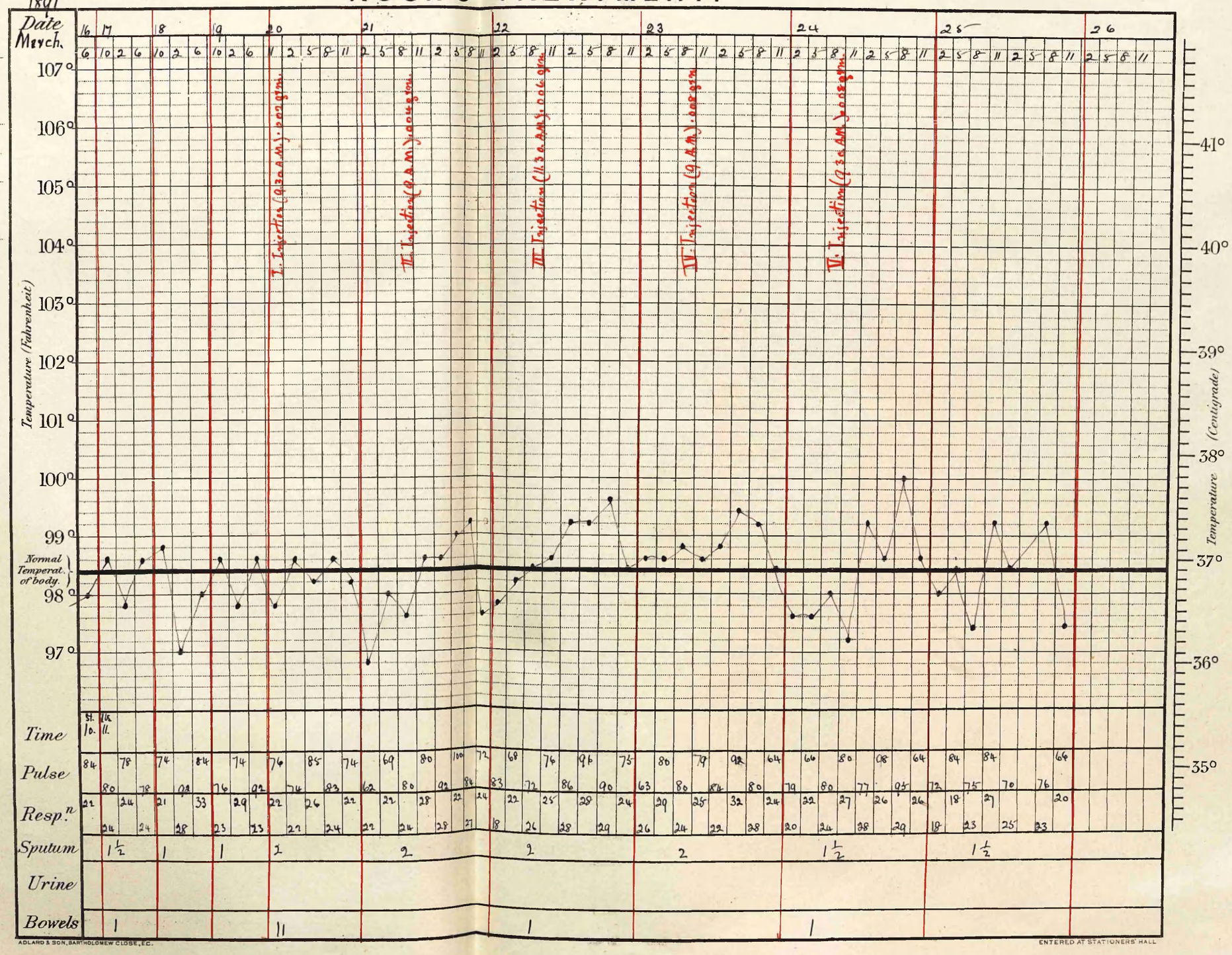
No. of bed

Name: Percy Gavin

Age: 25.

Occ.: Soldier

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

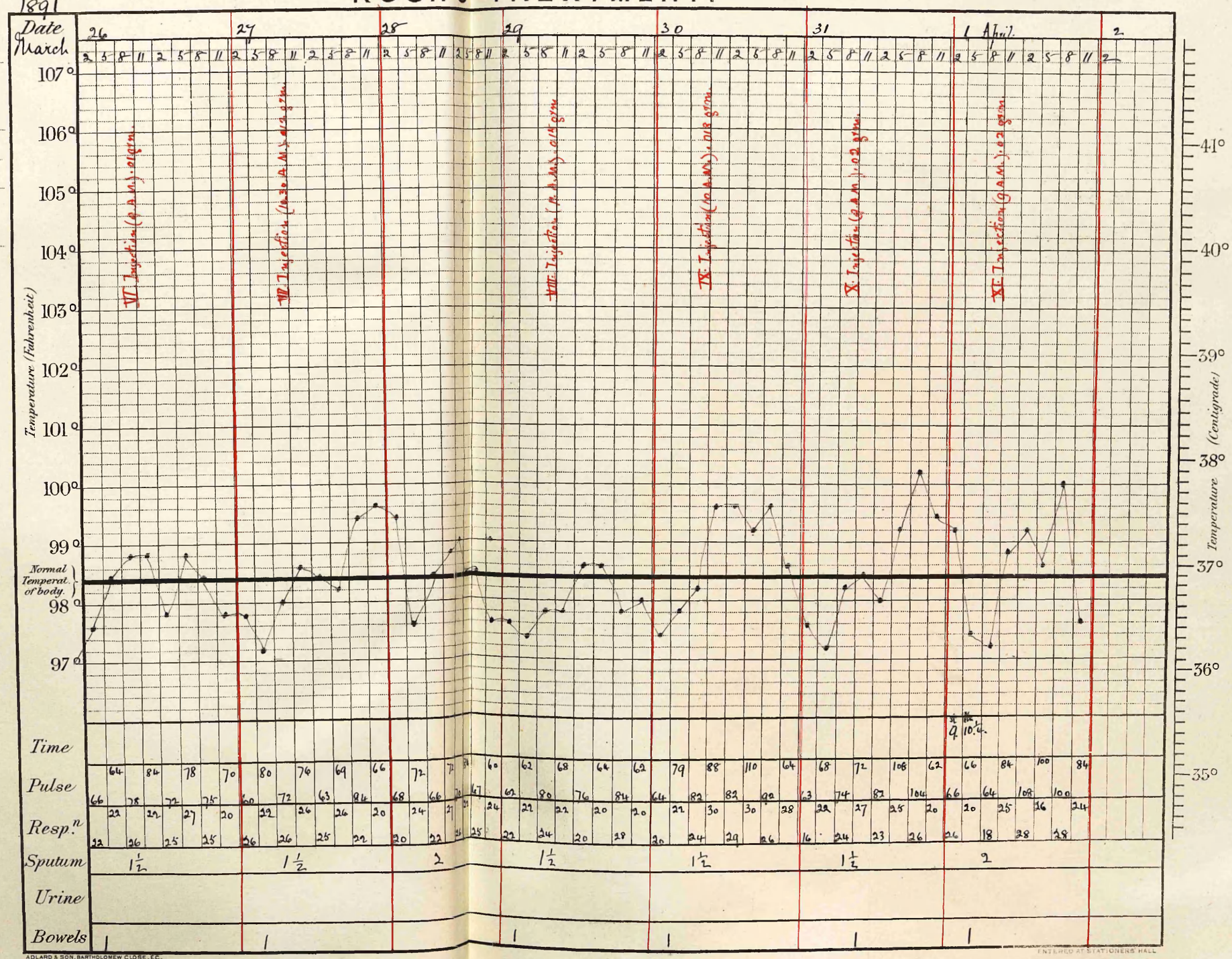
No. of bed

Name: Percy Yarin

Age: 25

Occ.: Soldier

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

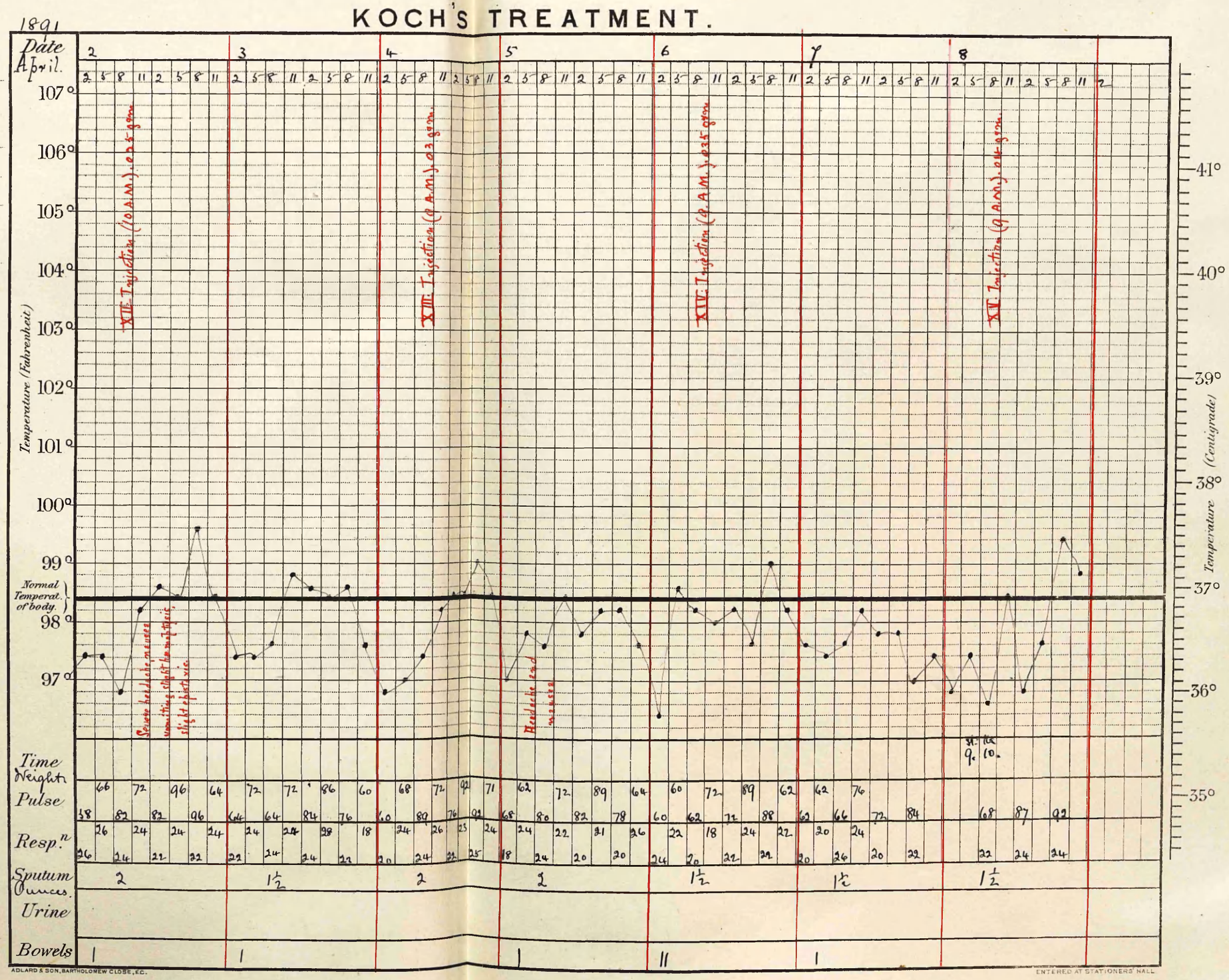
No. of bed

Name: Percy Gavin

Age: 25

Occ. Soldier

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

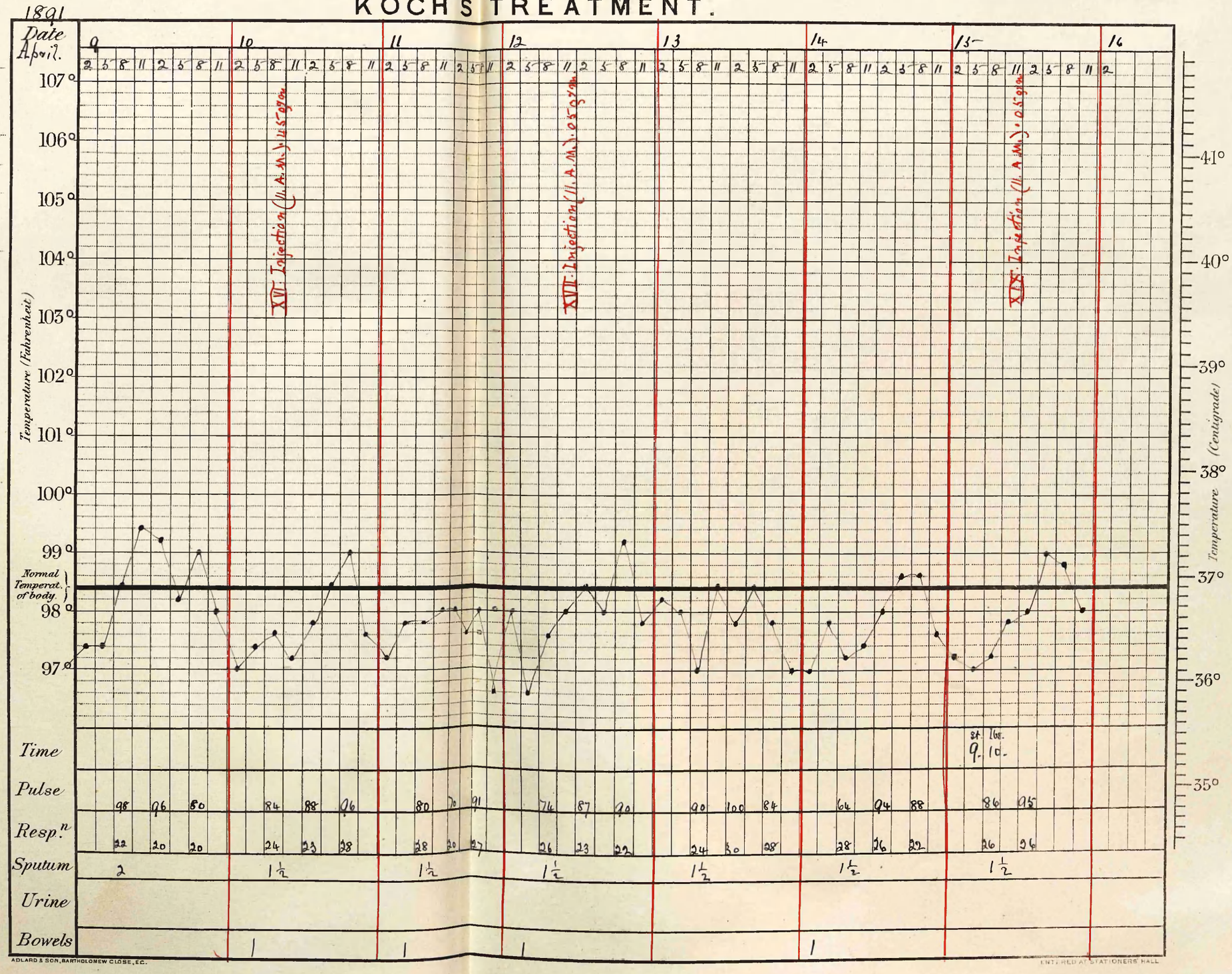
No. of bed

Name: Percy Gavin

Age: 25.

Occ.: Soldier

Date of admission: March 16. 1891.



KOCH'S TREATMENT.

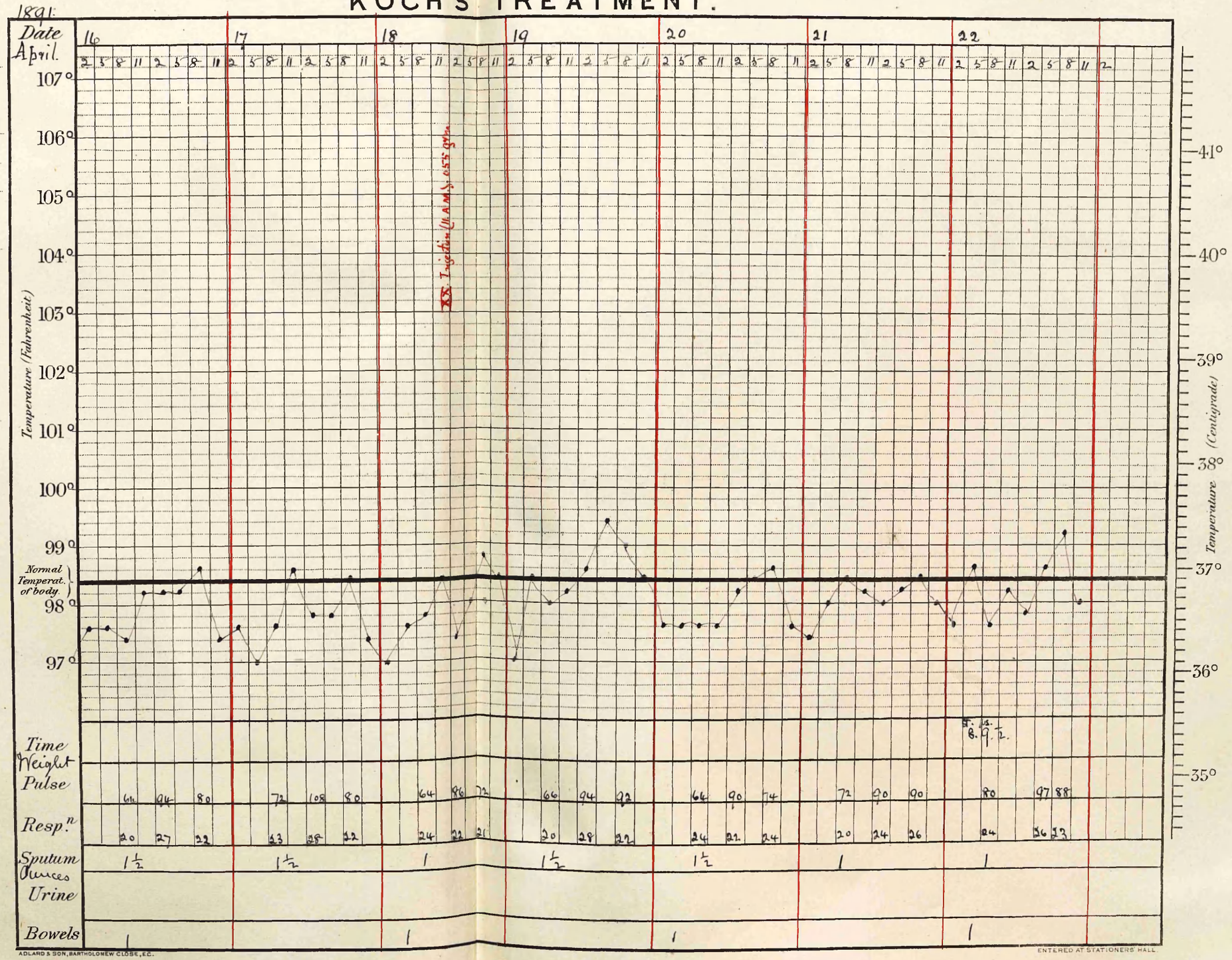
No. of bed

Name: Percy Gavin

Age: 25.

Occ. Soldier

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

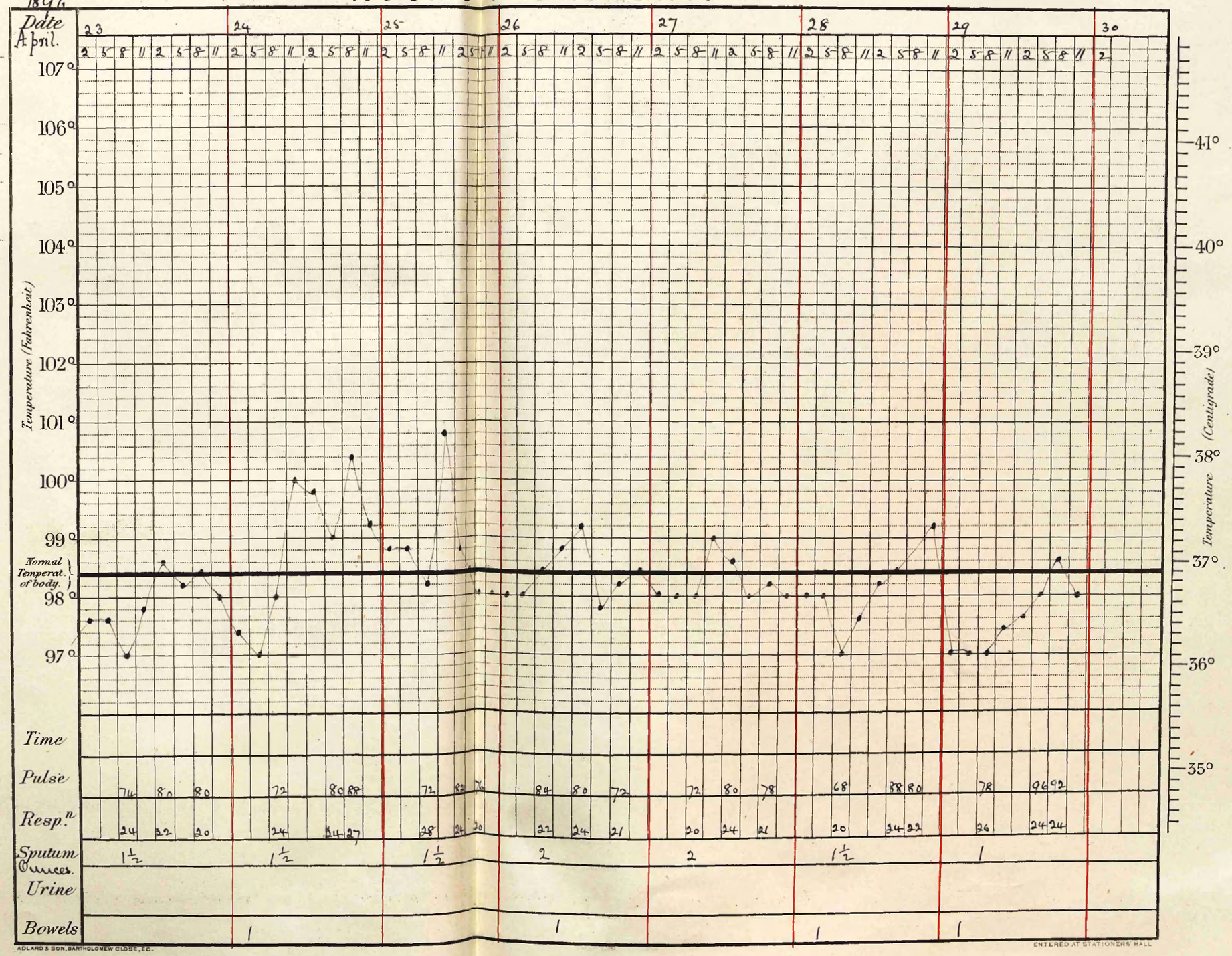
No. of bed

Name: Percy Gavin

Age: 25.

Occ: Soldier

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

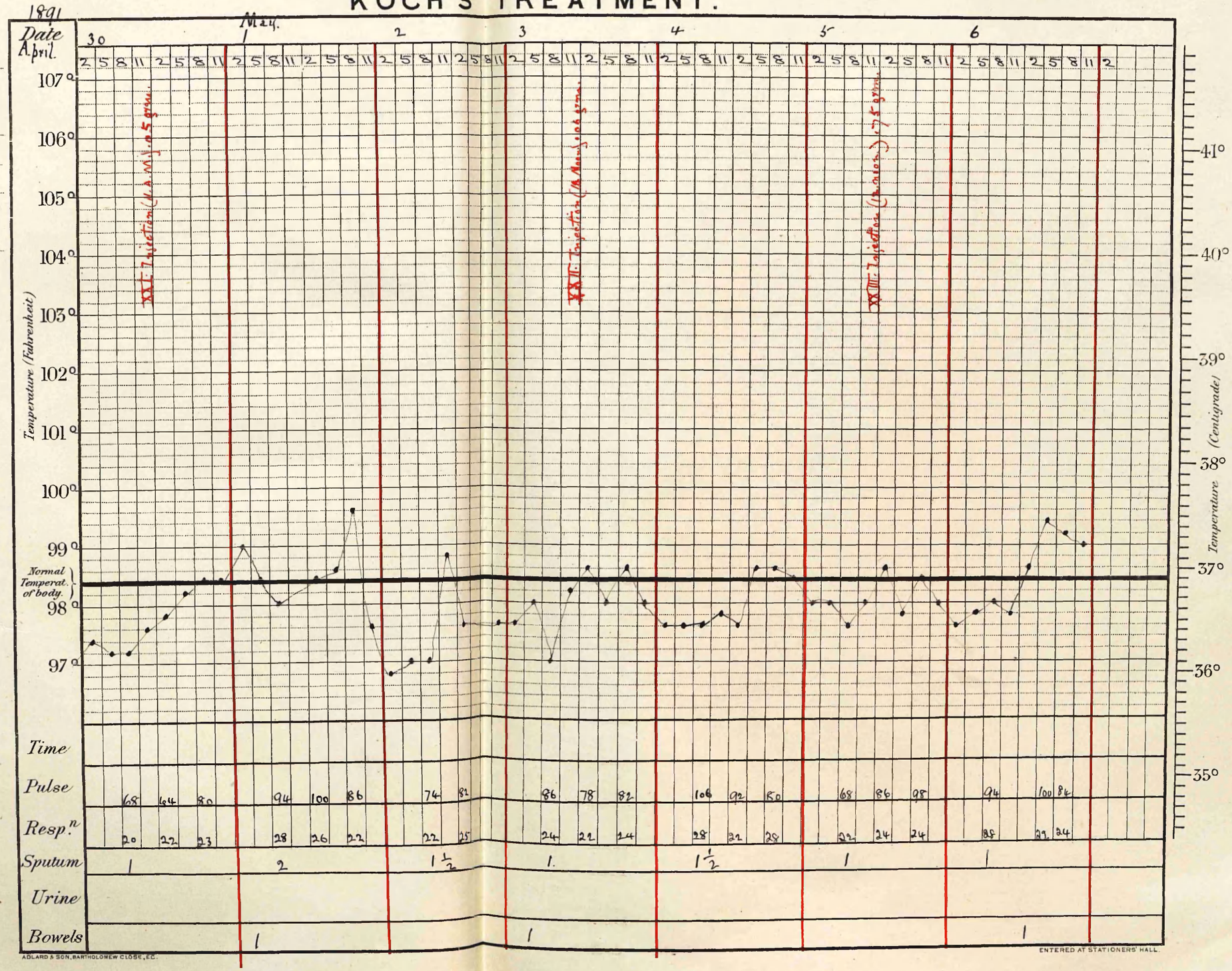
No. of bed

Name: Percy Gavin

Age: 25

Occ. Soldier

Date of admission: March 16. 1891



KOCH'S TREATMENT.

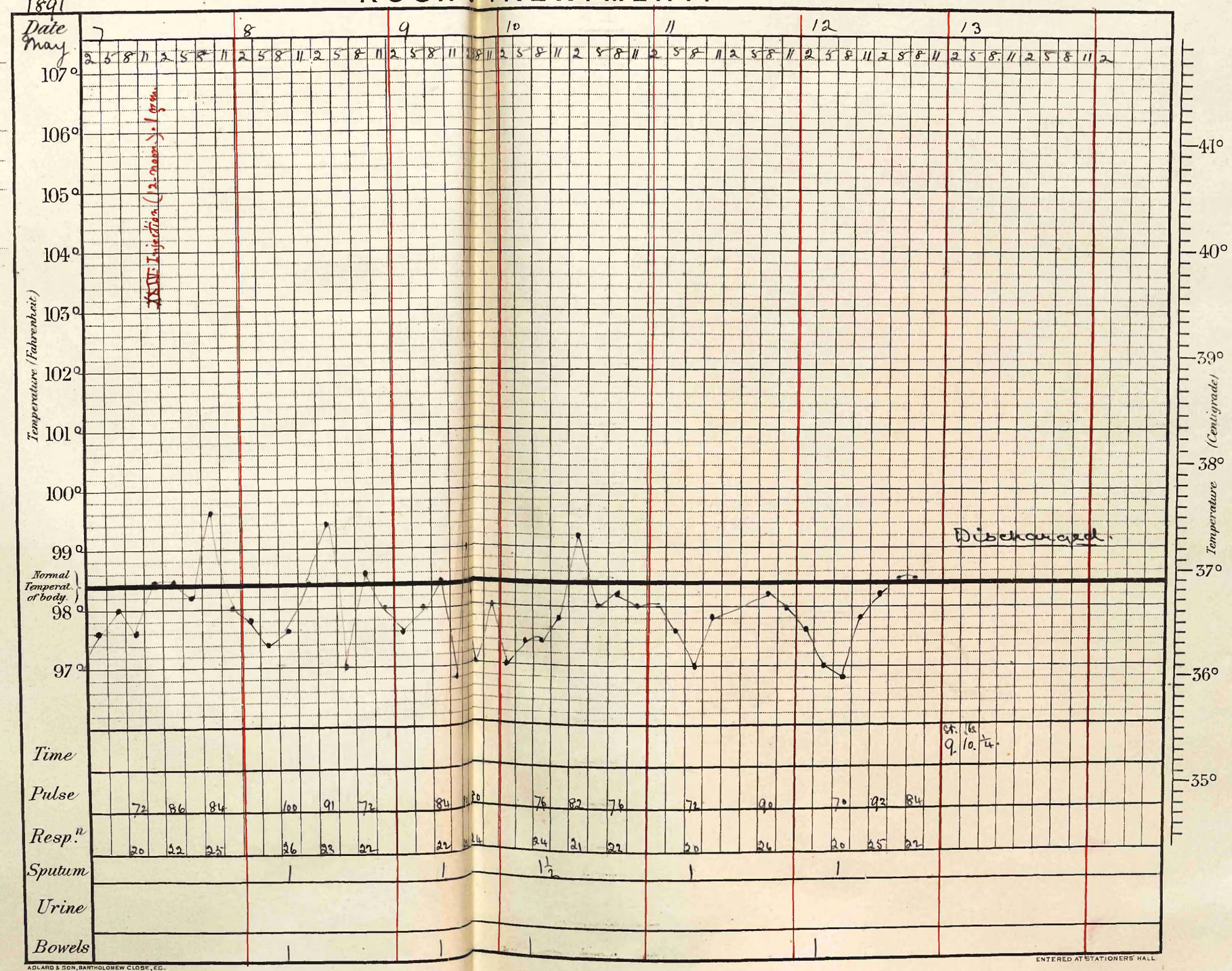
No. of bed

Name { Percy Gavin.

Age 25

Occ. Soldier

Date of admission March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

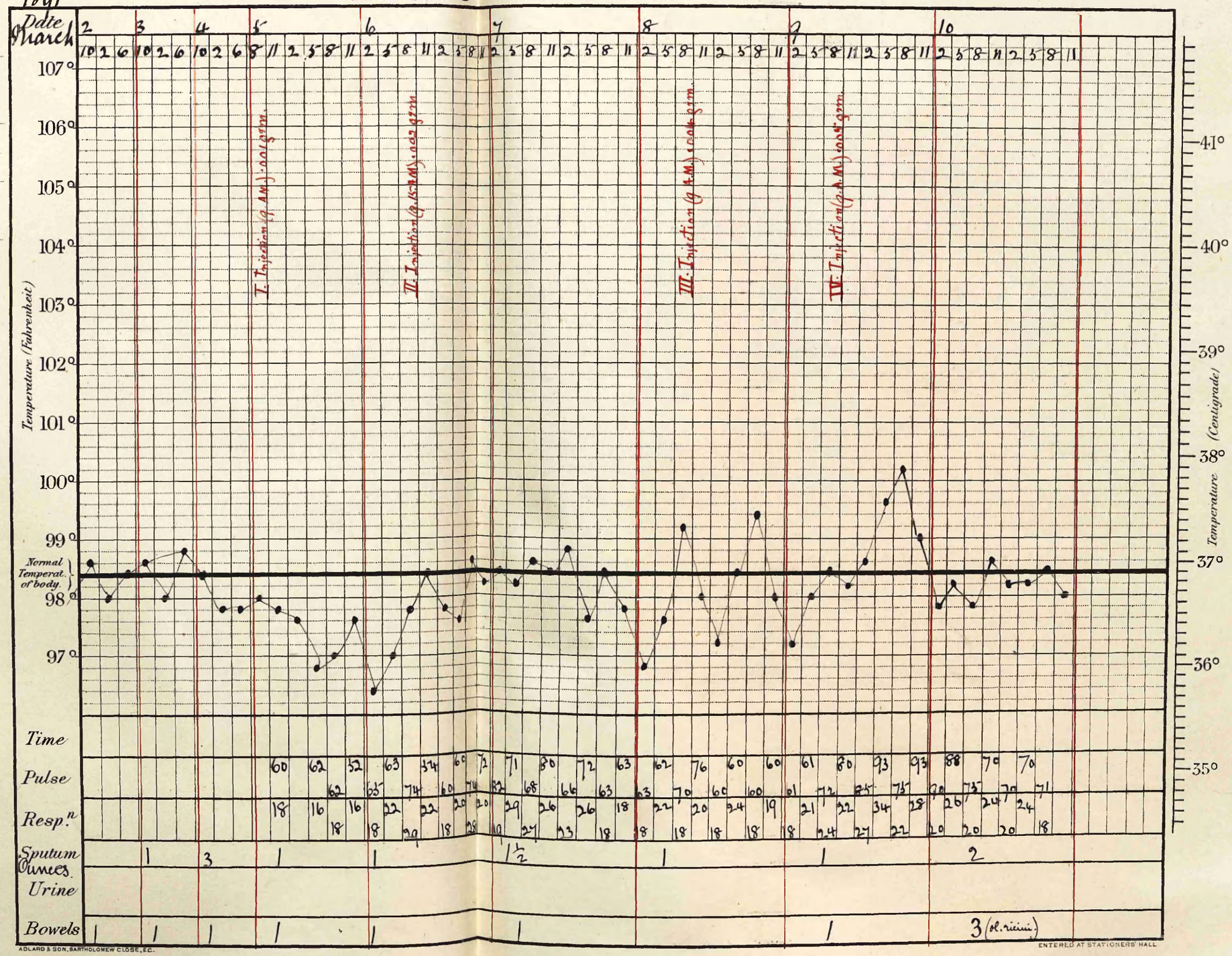
No. of bed

Name: Simeon Ortres

Age: 19

Occ. Miner

Date of admission: Feb. 19. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

1891

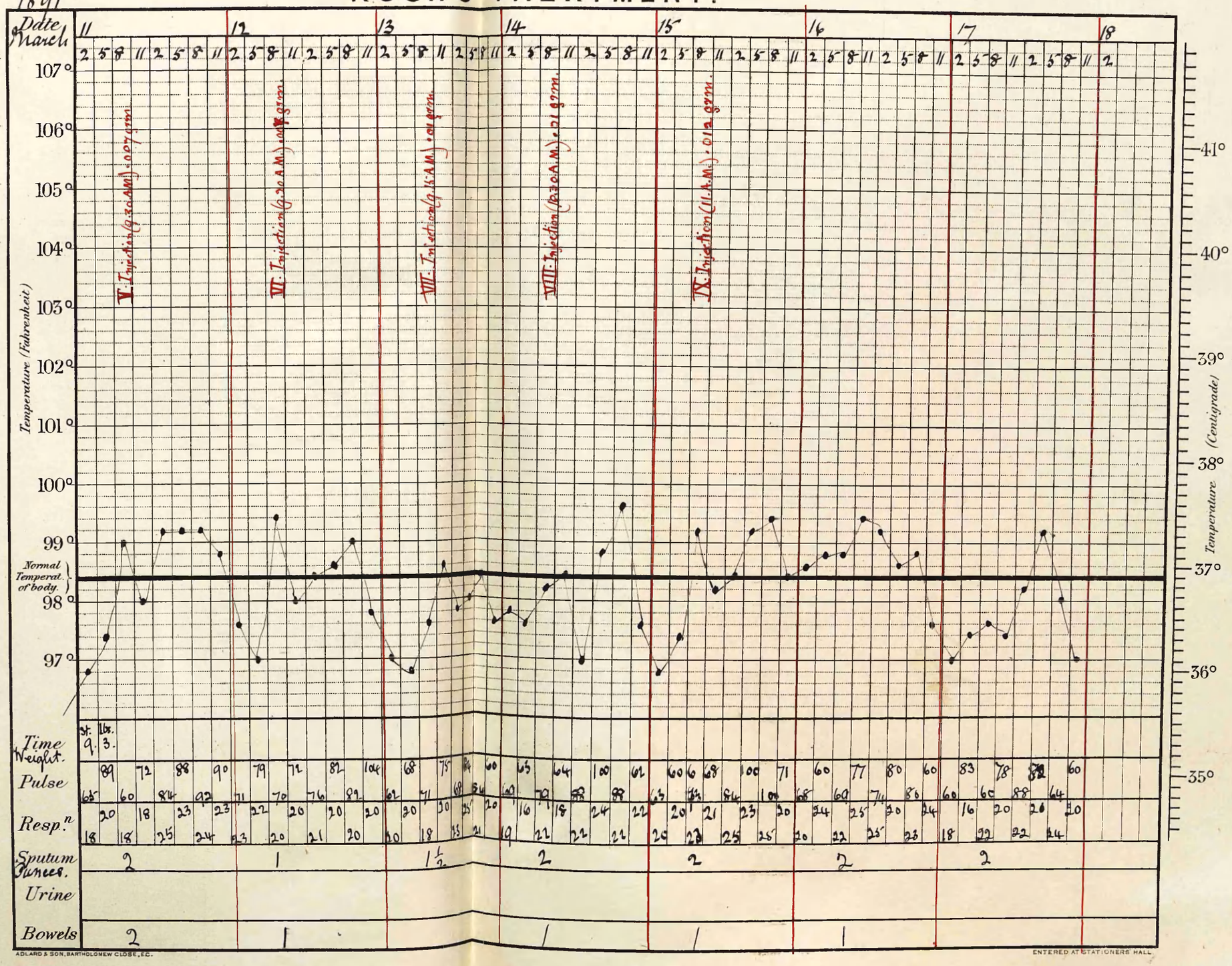
No. of bed

Name: Simeon Nobes

Age: 19.

Occ. Miner

Date of admission: Feb. 19. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

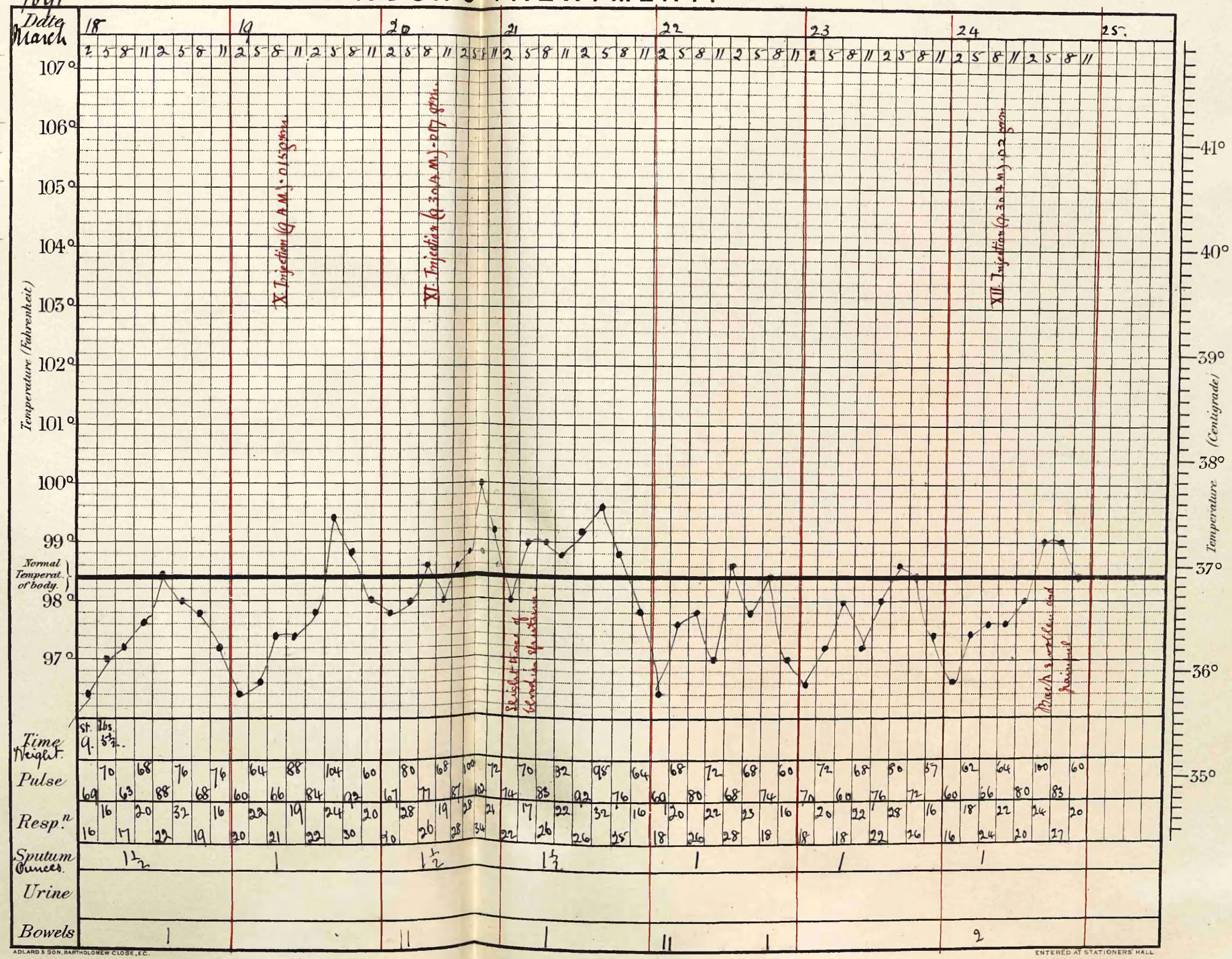
No. of bed

Name: Simeon Nokes

Age: 19.

Occ. Miner.

Date of admission: Feb. 19. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

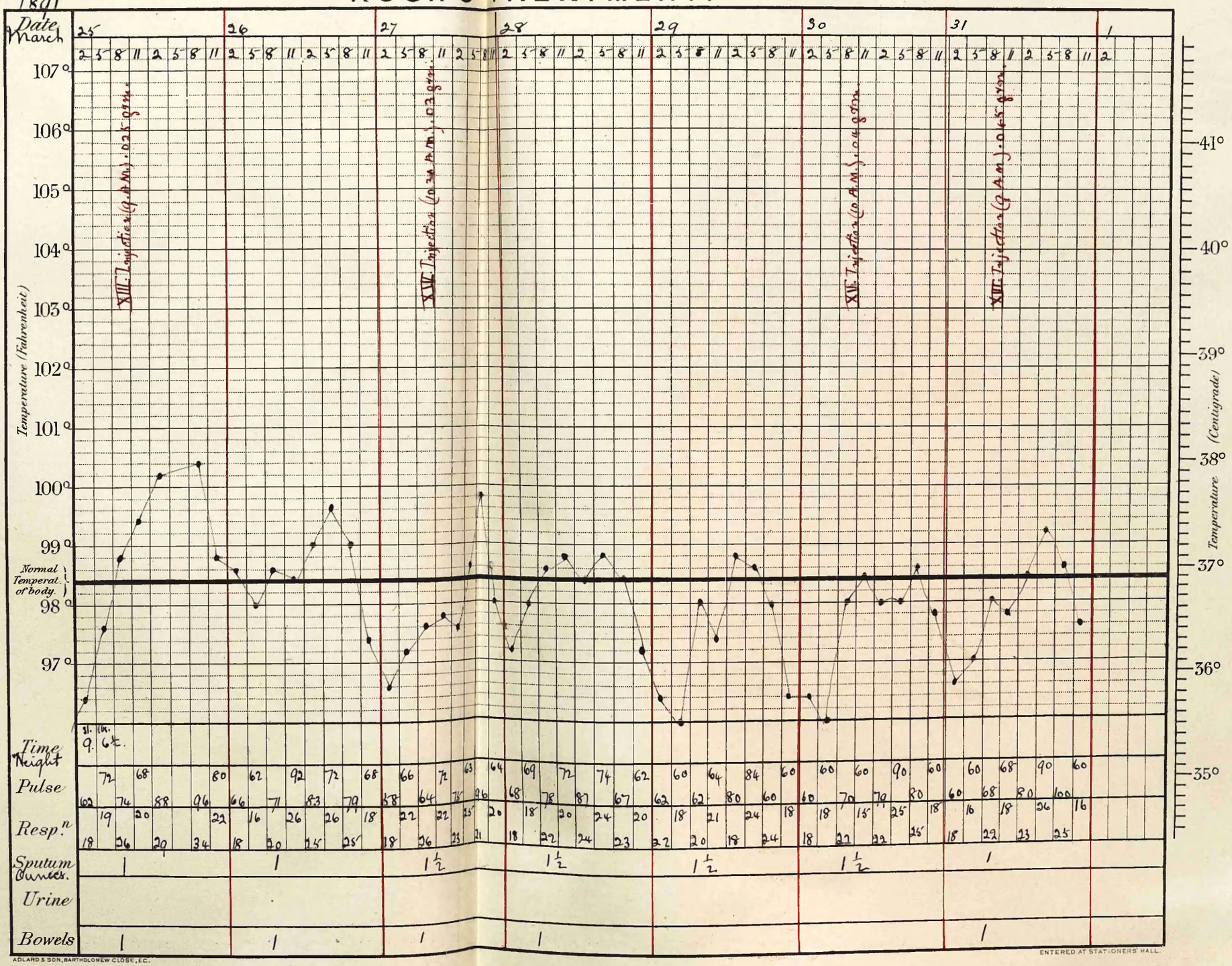
No. of bed

Name: Simeon Nokes

Age: 19

Occ. Miner

Date of admission: February 25th 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

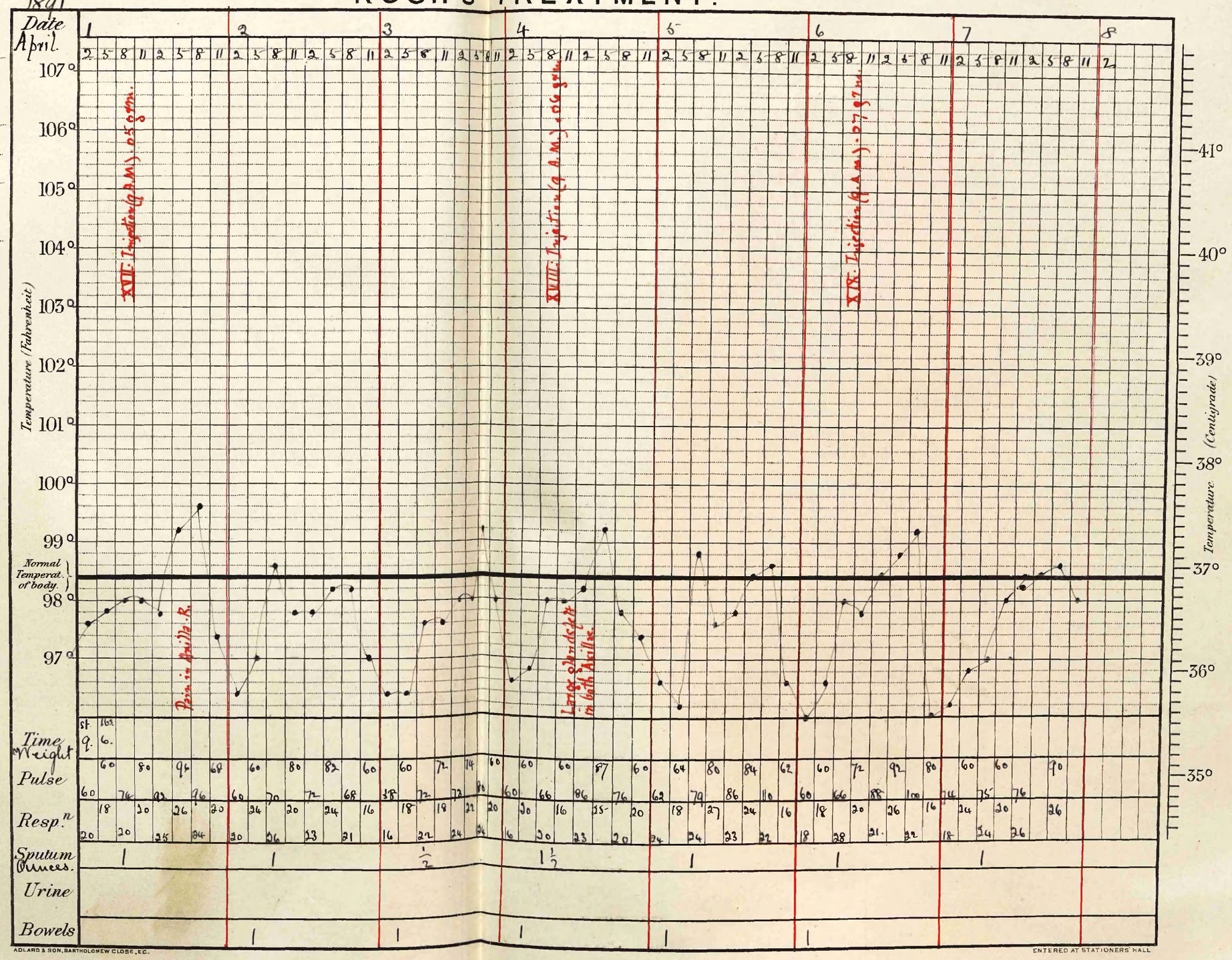
No. of bed

Name: Simeon Nobres

Age: 19

Occ: Miner

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

1891

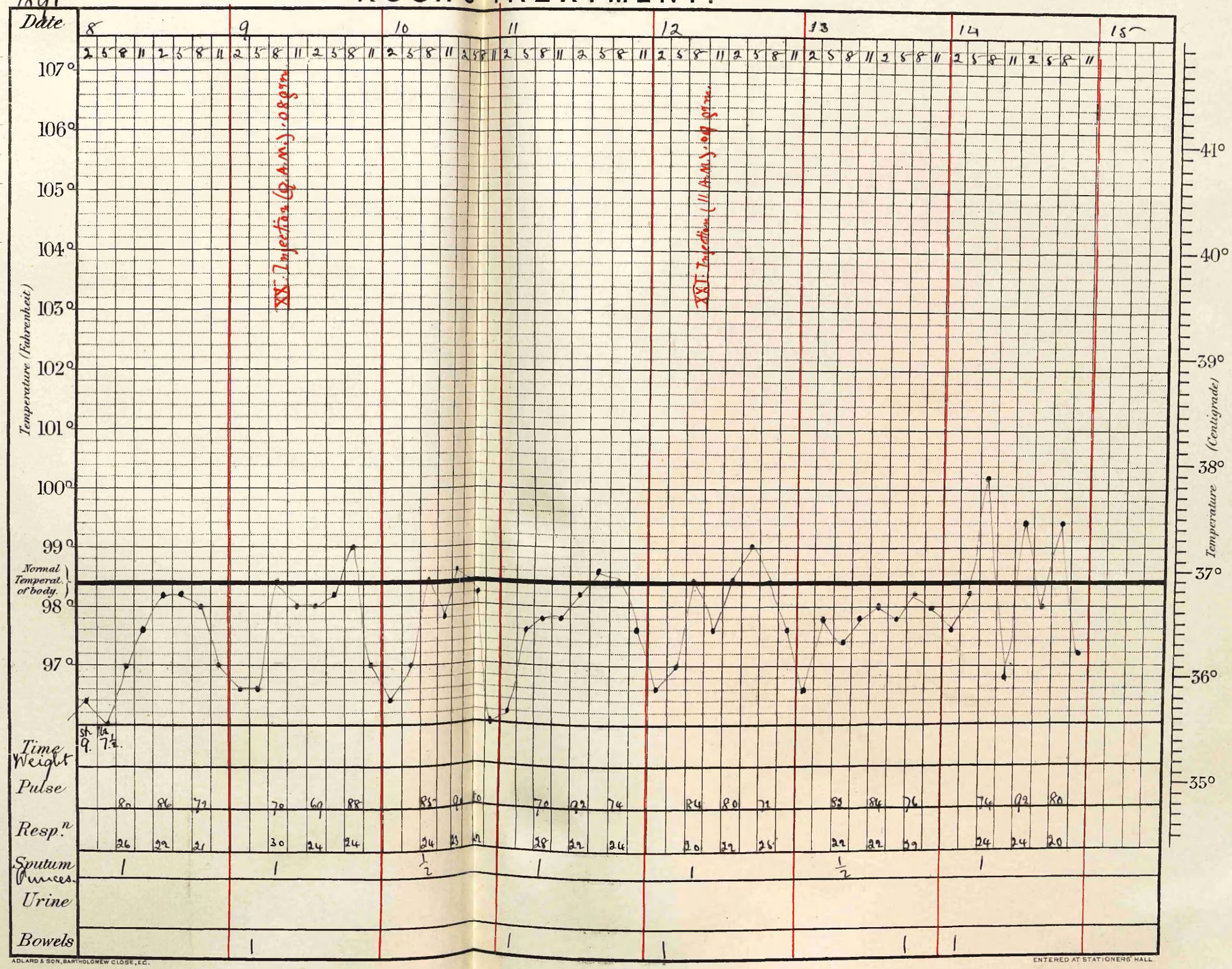
No. of bed

Name: Simeon Dobres

Age: 19

Occ.: Miner

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

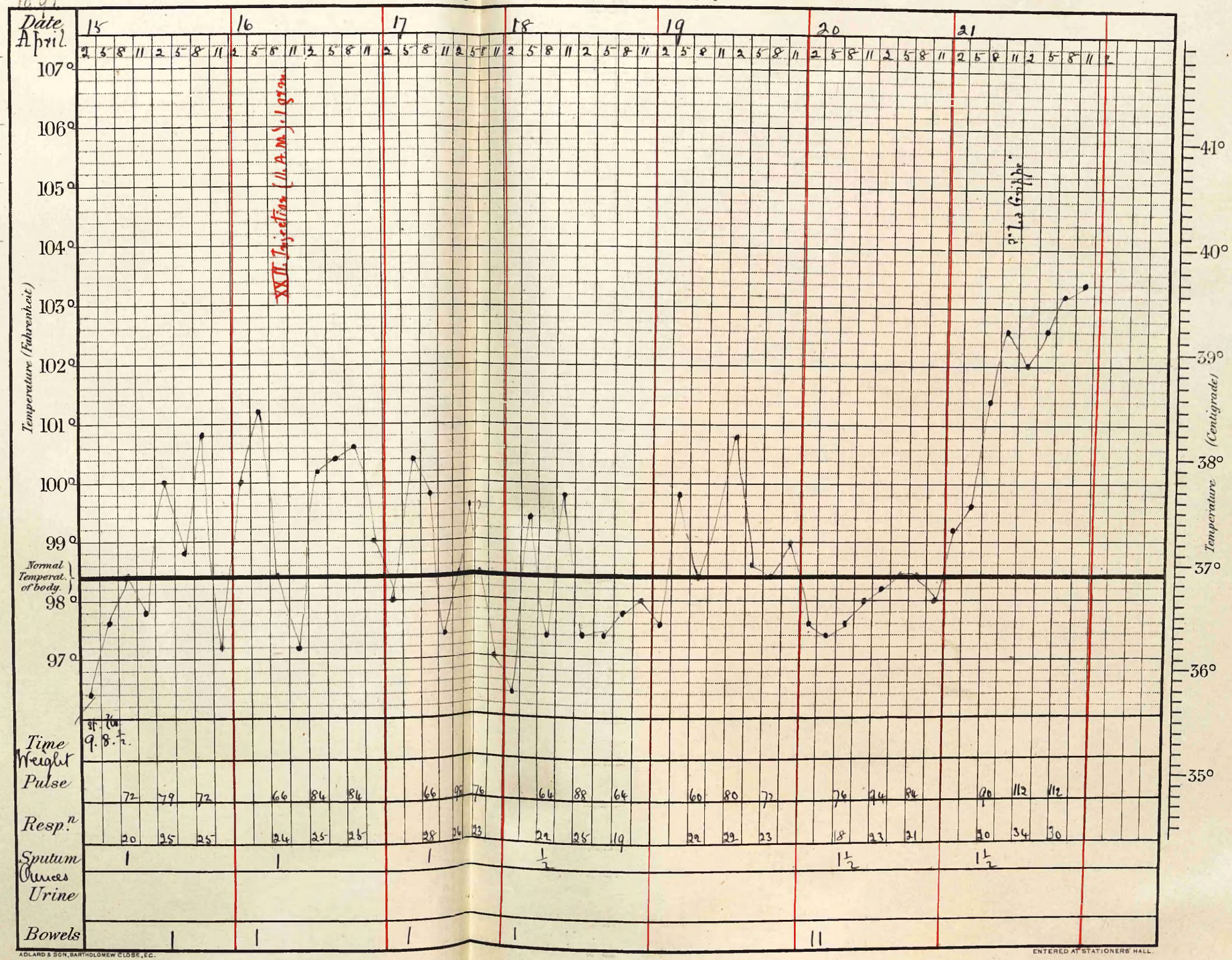
No. of bed

Name: Simon Nobes

Age: 19

Occ: Miner.

Date of admission: March 16. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

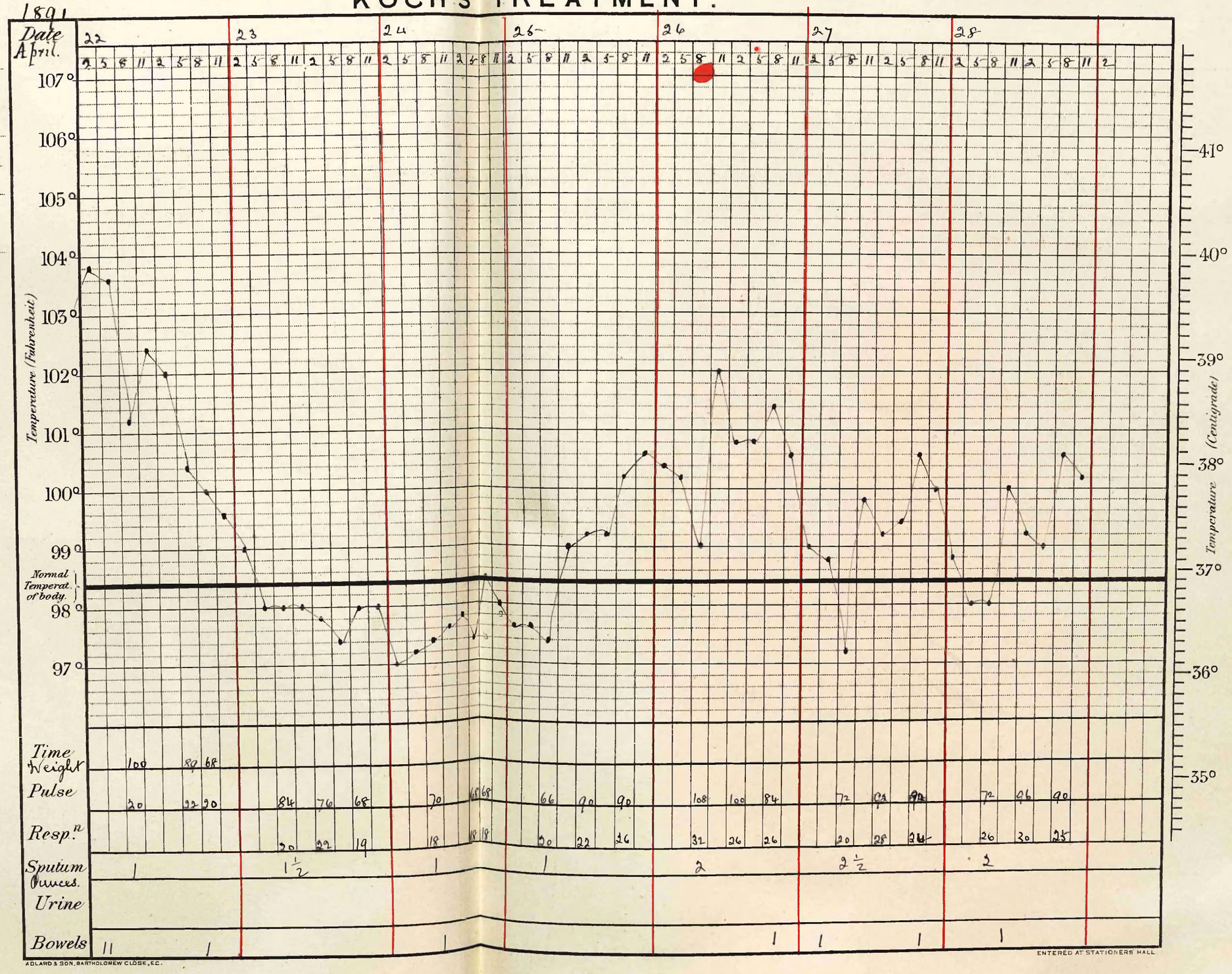
No. of bed

Name: Simeon Robes

Age 19

Occ. Miner

Date of admission: March 16. 1891.



KOCH'S TREATMENT.

No. of bed

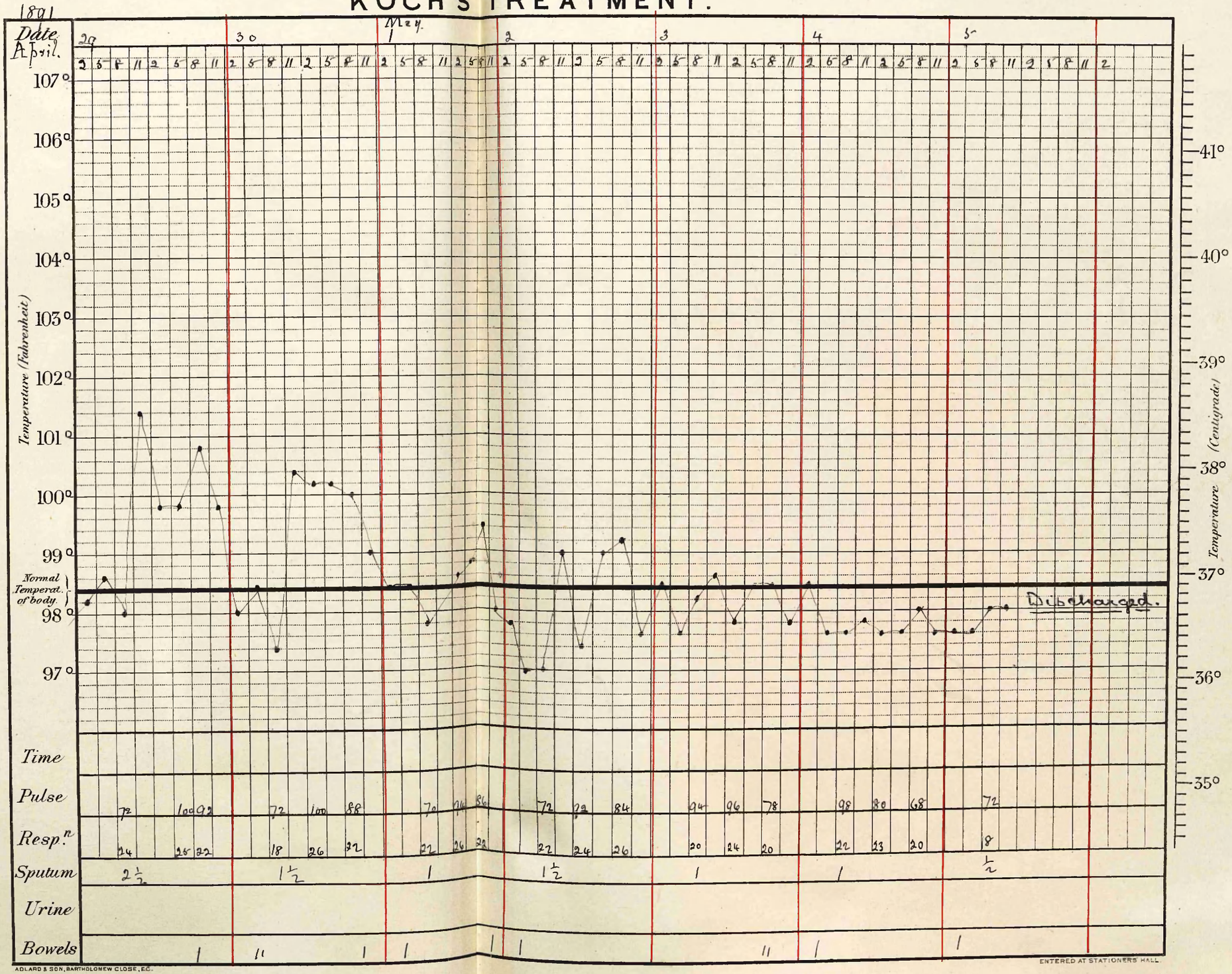
Name { Simeon Dobres

Age 19

Occ. Miner.

Date of admission

March 16. 1891



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

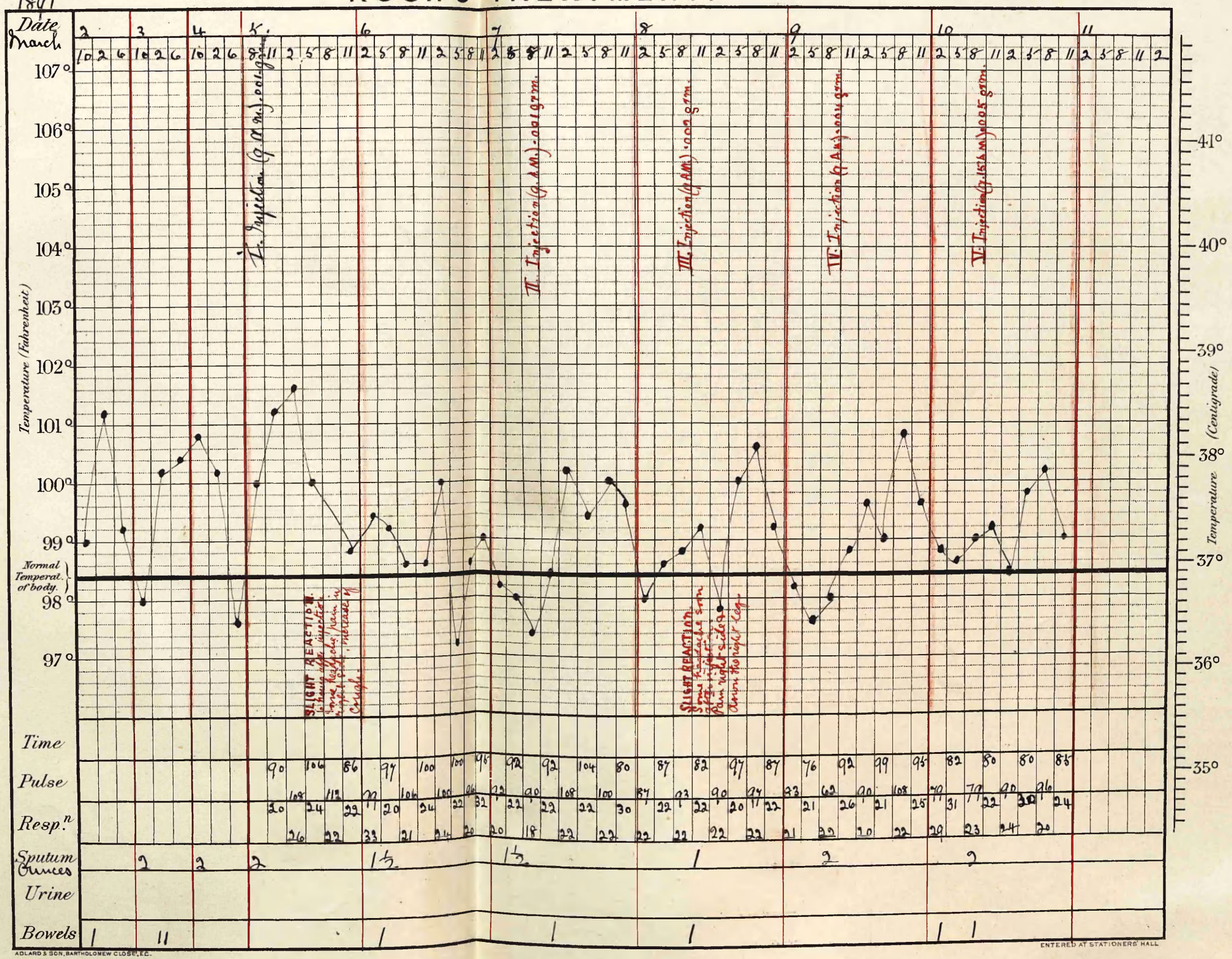
KOCH'S TREATMENT.

No. of bed

Name: George H. Dawson

Age: 21

Date of admission: Feb. 20. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

1891

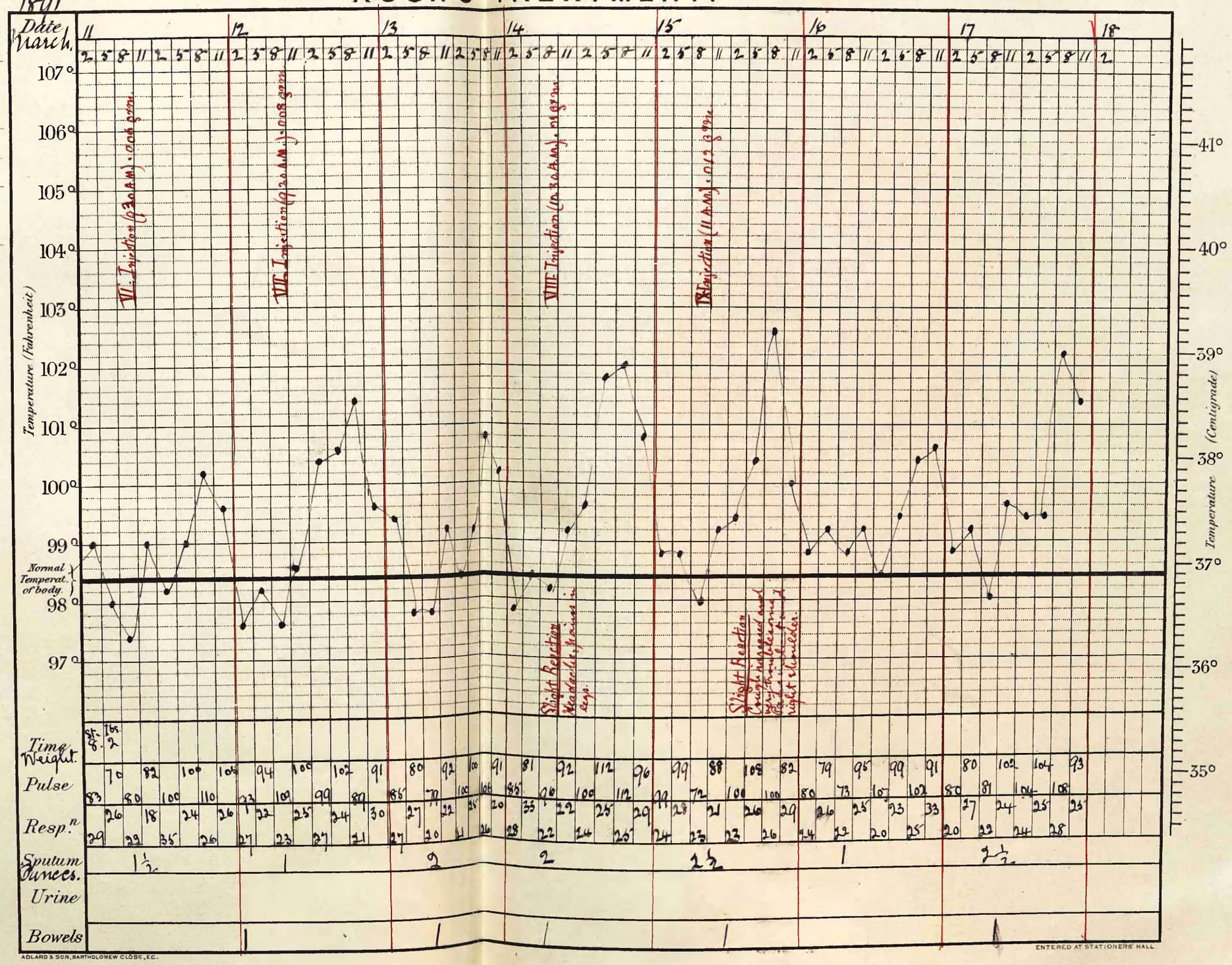
No. of bed

Name: George A. Dawson

Age: 21.

Occ. Steel turner.

Date of admission: Feb. 20. 1891.



KOCH'S TREATMENT.

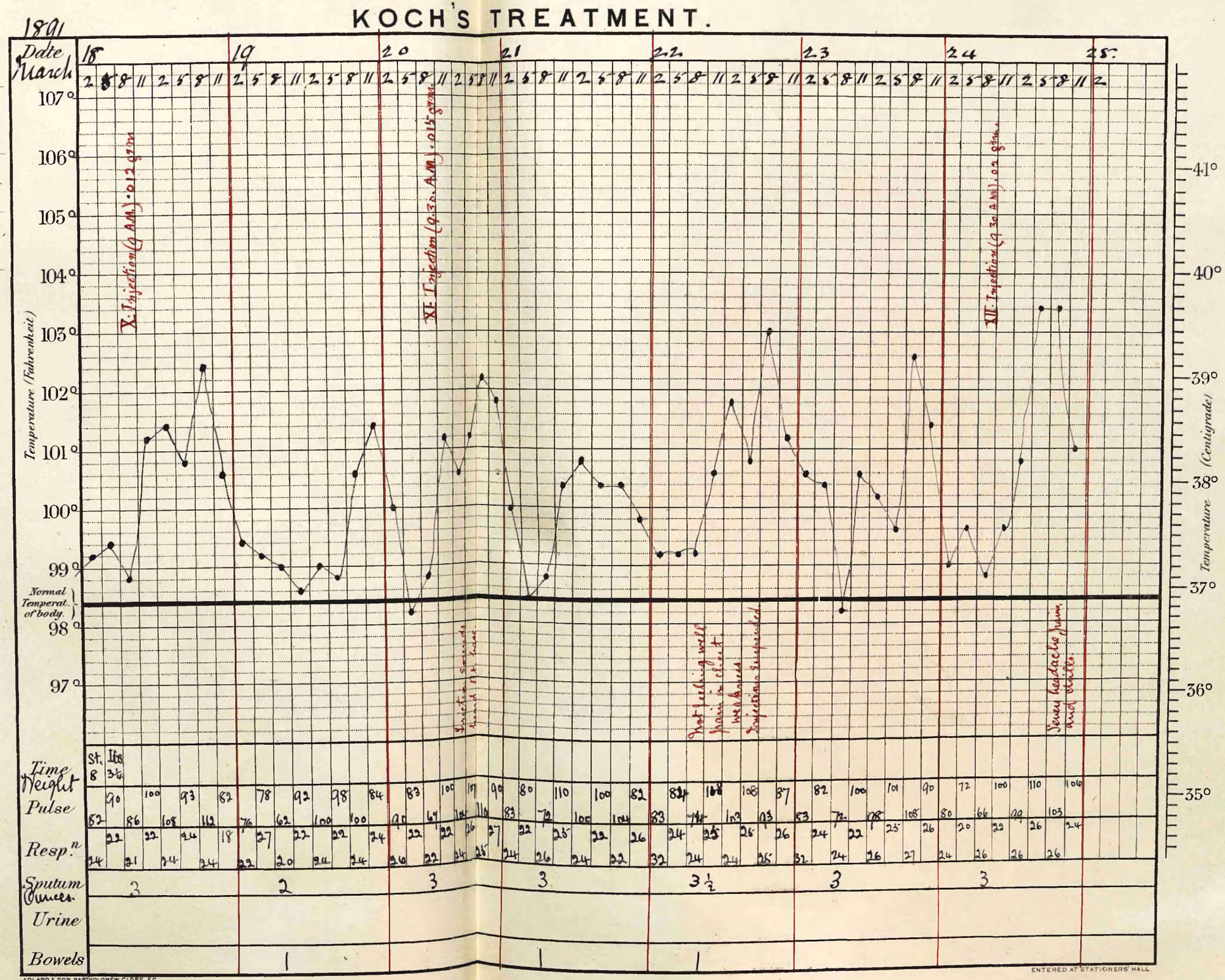
No. of bed

Name: George H. Dawson

Age: 21

Occ. Stocking turner

Date of admission: February 20. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

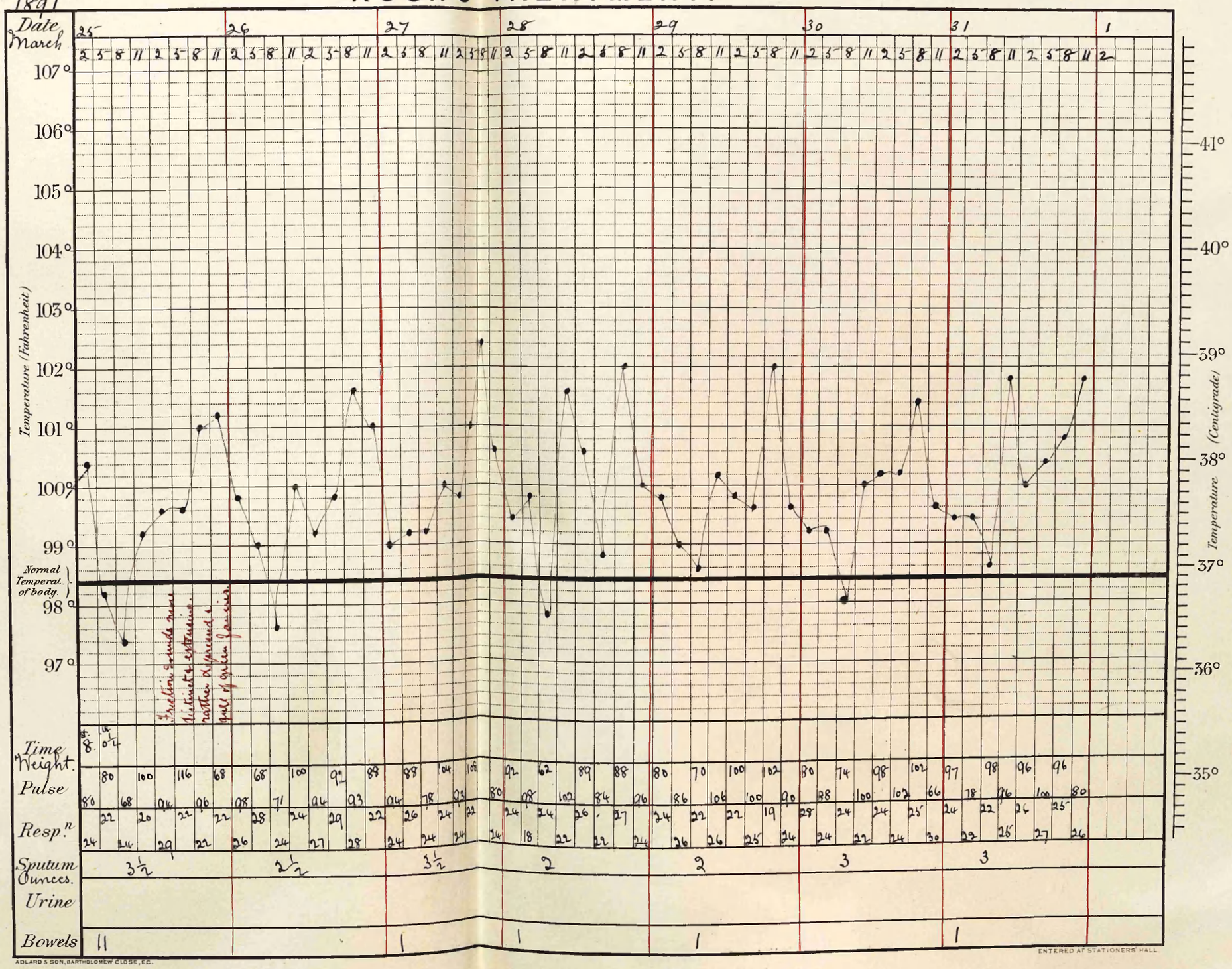
No. of bed

Name George H. Dawson

Age 21

Occ. Steel turner

Date of admission February 20. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

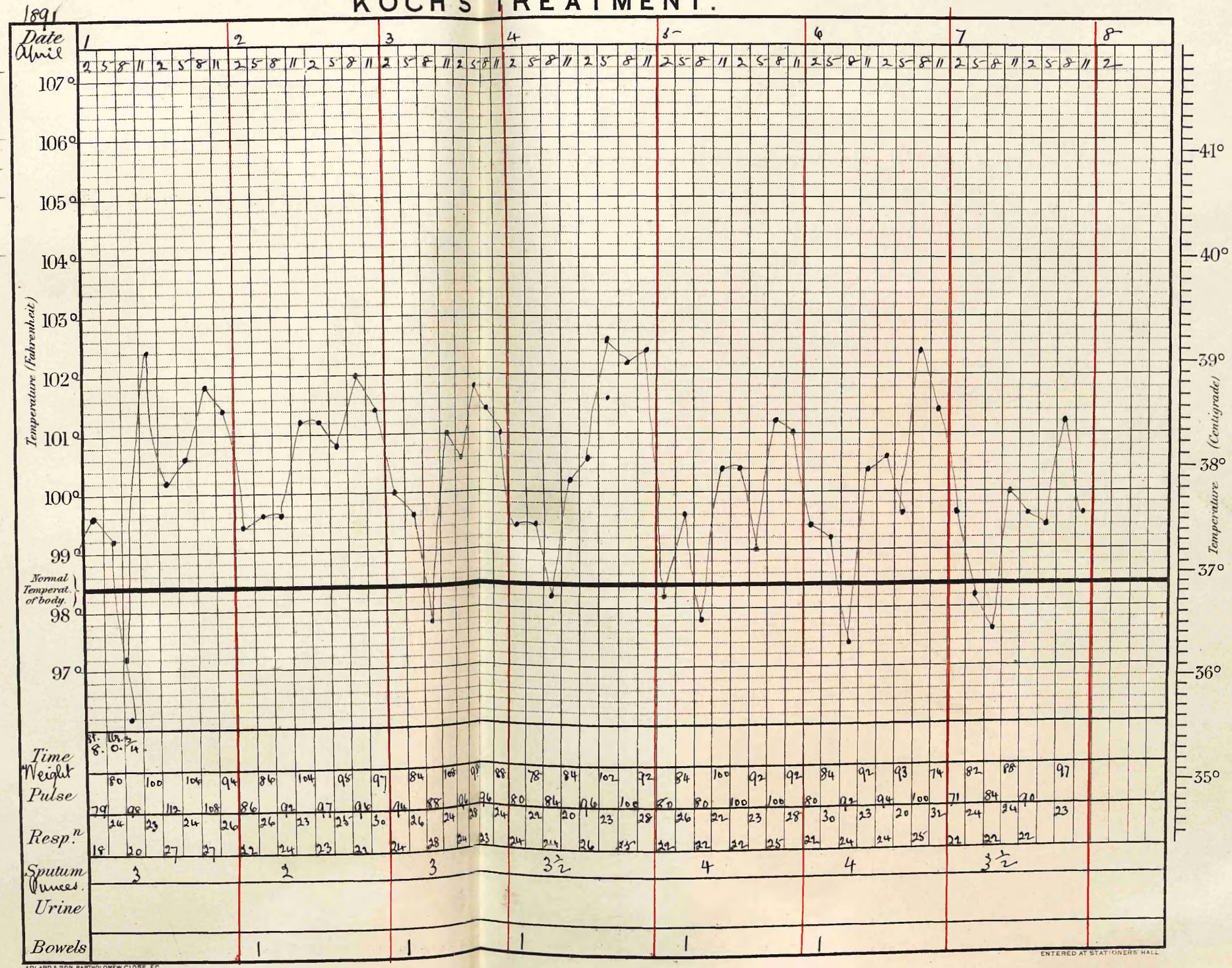
No. of bed

Name: George Dawson

Age: 21.

Occ. Steel turner.

Date of admission: February 20. 1891



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

1891

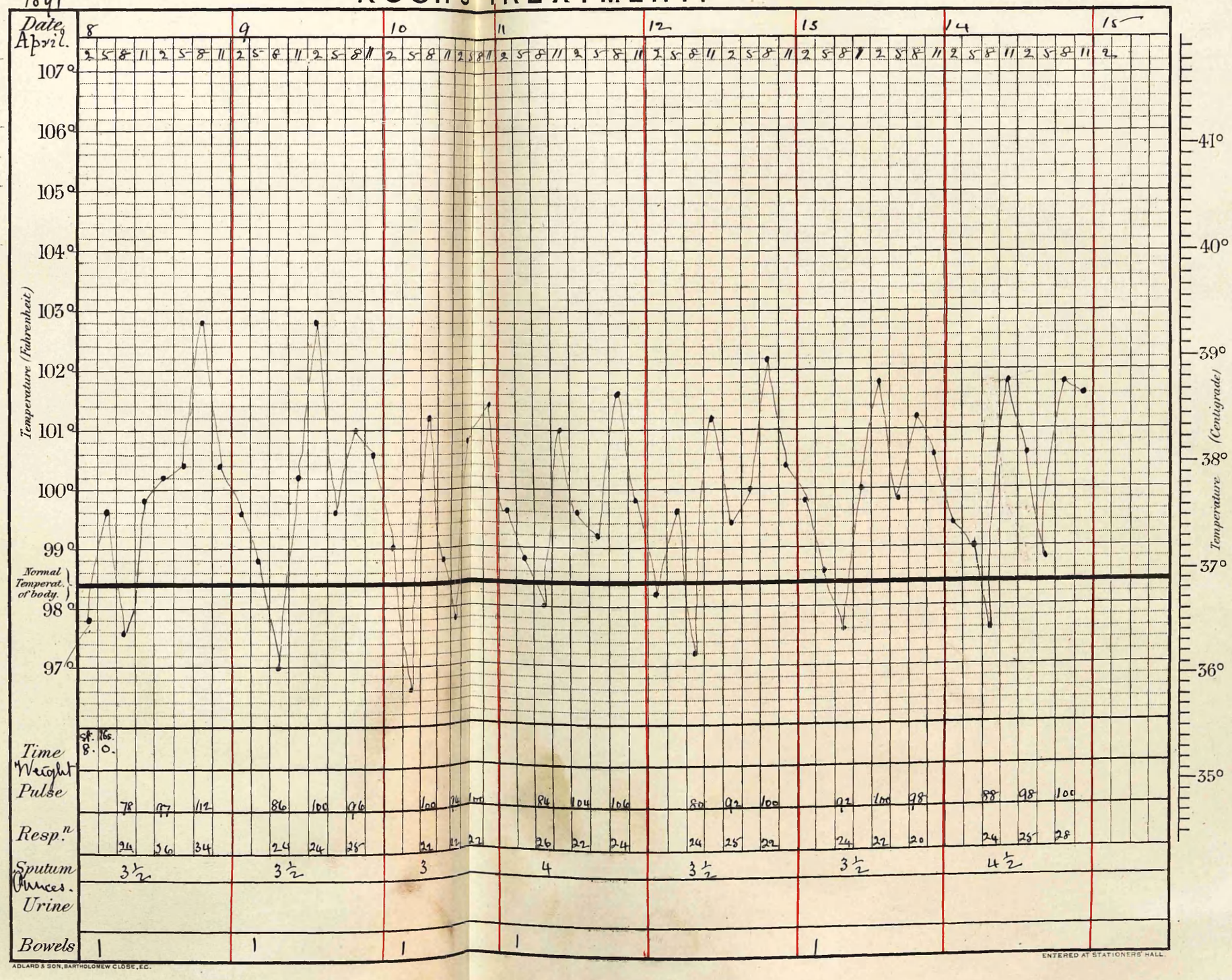
No. of bed

Name: George Dawson

Age: 21.

Occ. Steel turner.

Date of admission: Feb. 20. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

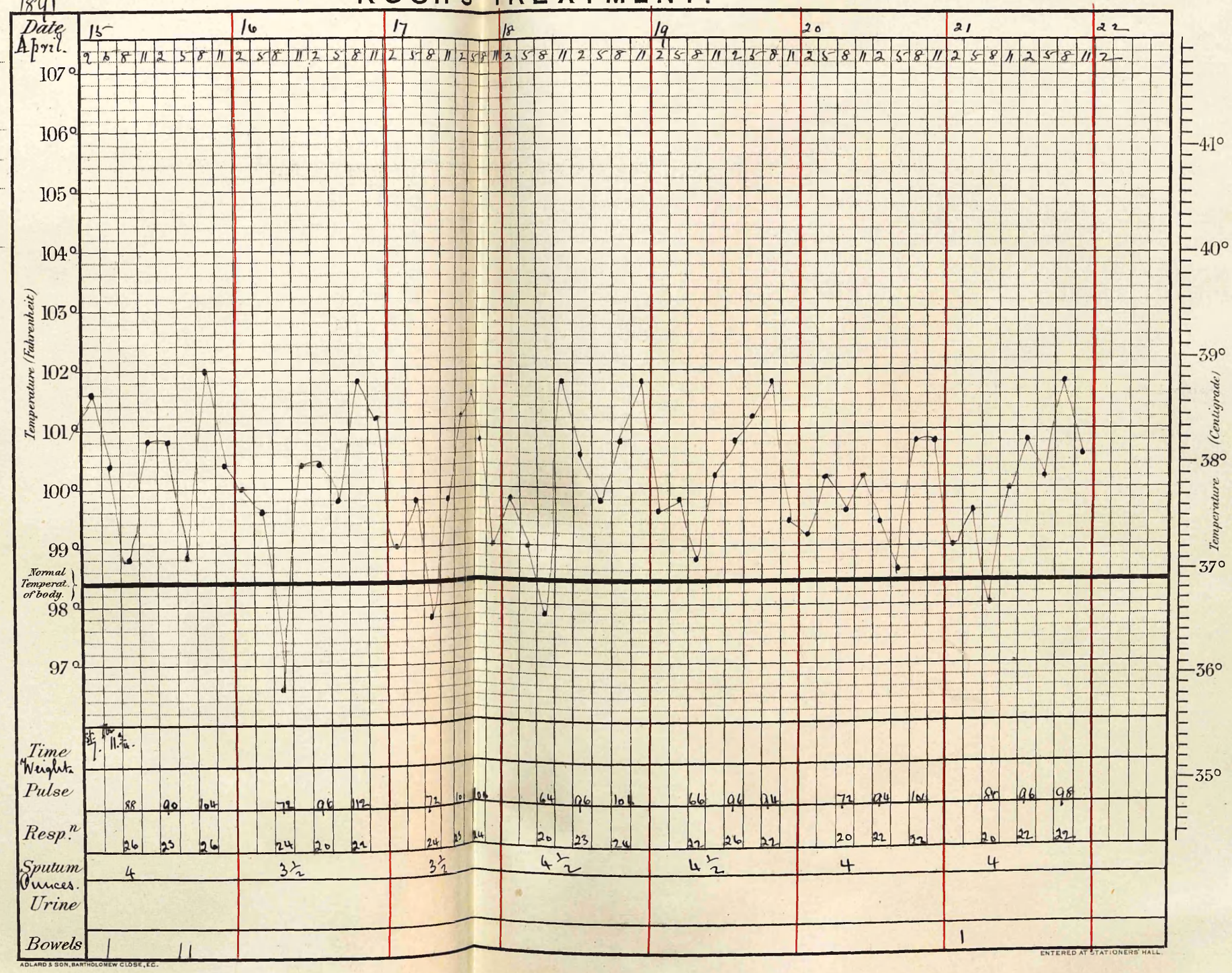
No. of bed

Name: George Dawson

Age: 21

Occ. Steel turner.

Date of admission: Feb 20. 1891.



KOCH'S TREATMENT.

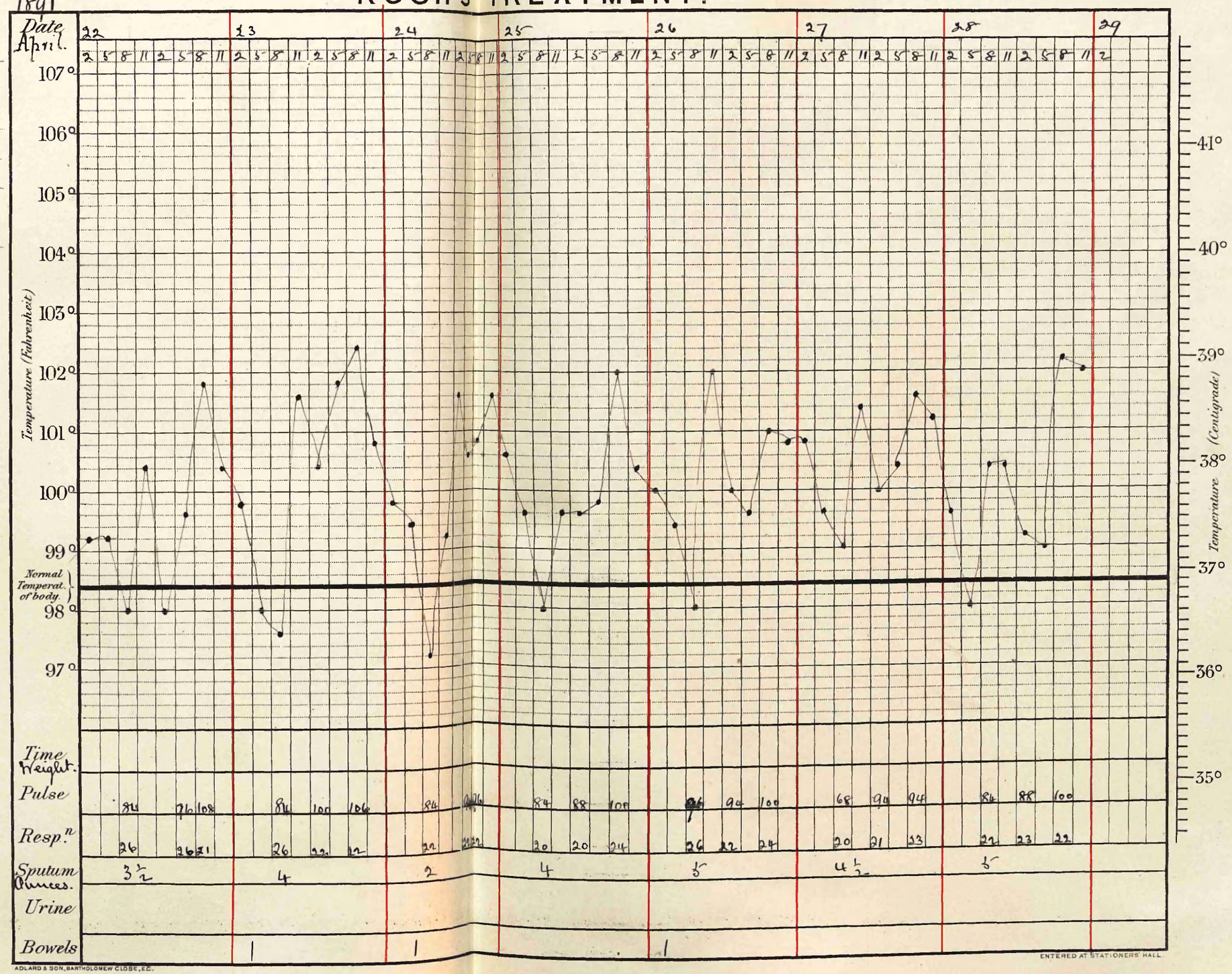
No. of bed

Name: George Dawson

Age: 21.

Occ. Steel turner.

Date of admission: Feb. 20. 1891.



KOCH'S TREATMENT.

No. of bed

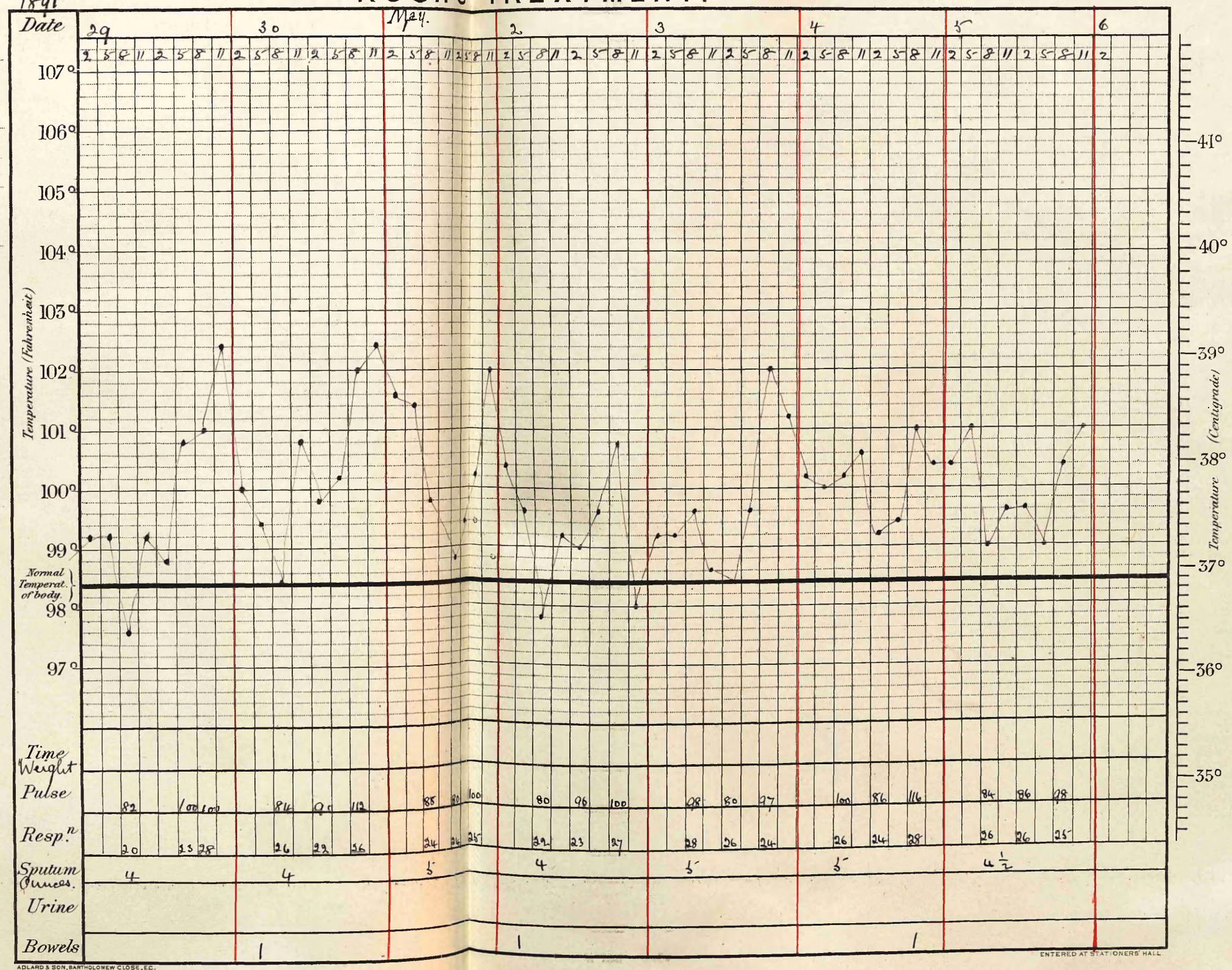
Name: George H. Lawson

Occ. Steel turner.

Age 21

Date of admission

Feb. 20. 1891.



KOCH'S TREATMENT.

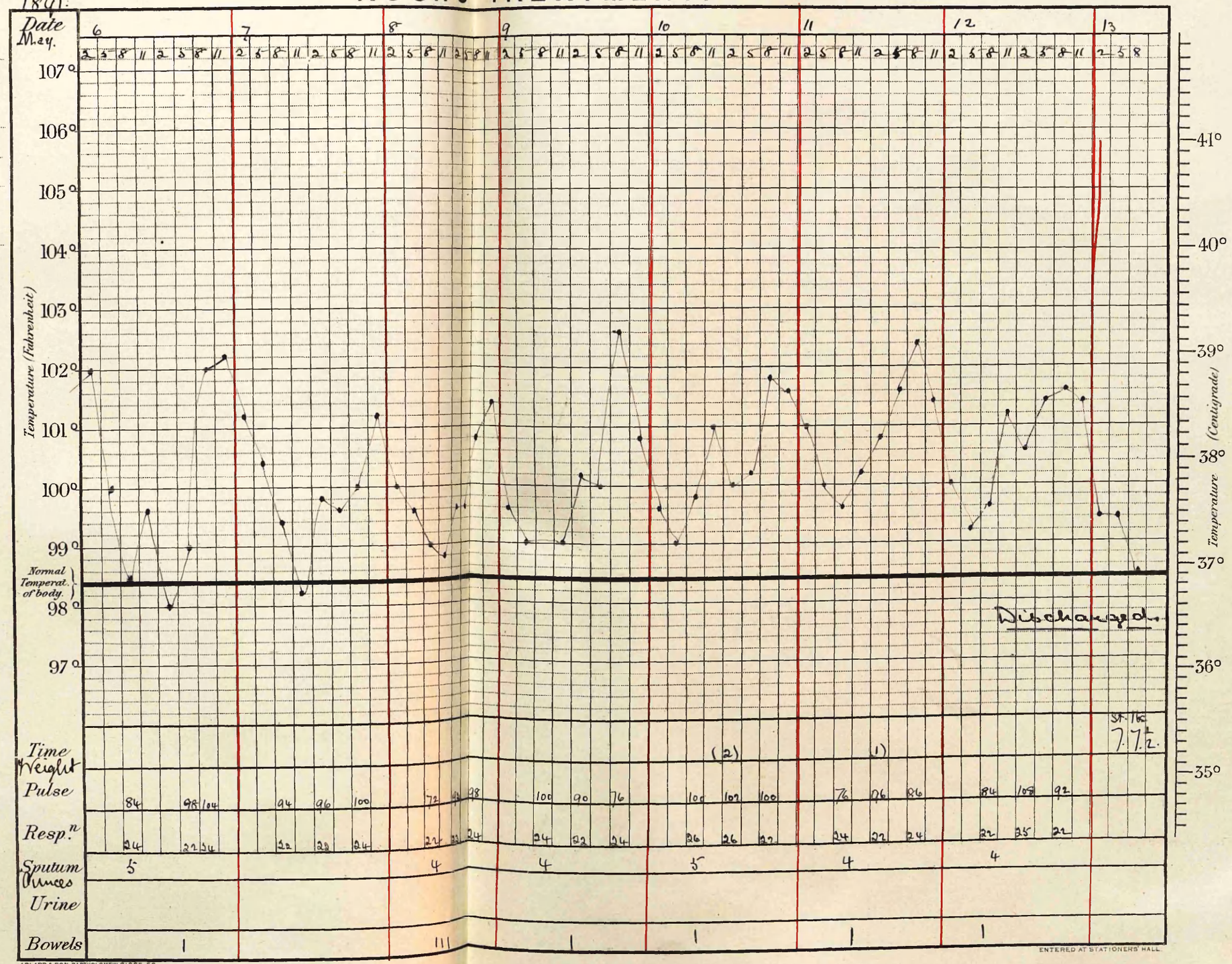
No. of bed

Name { George Dawson

Age 21.

Occ. Steel Turner.

Date of admission Feb. 20. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

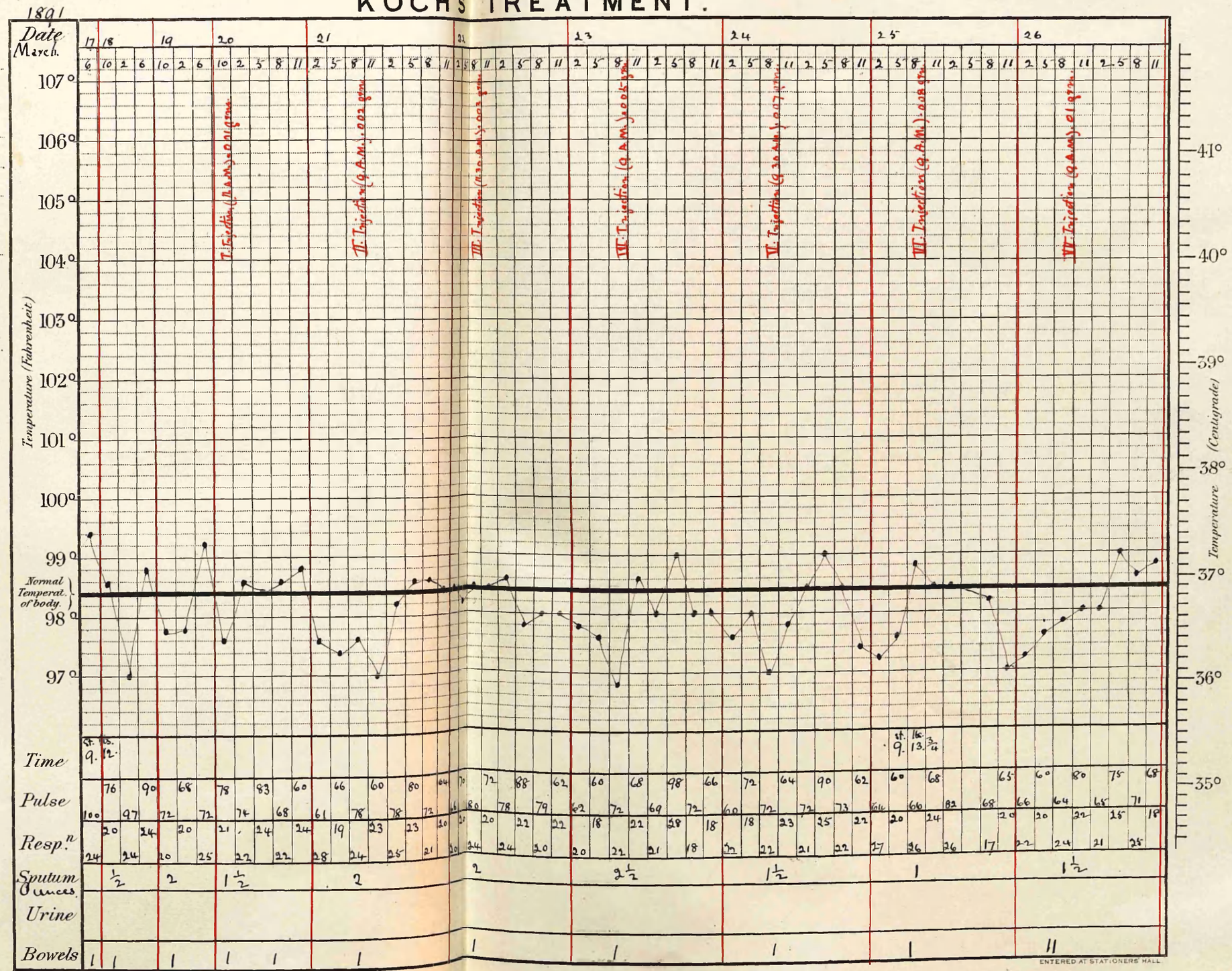
No. of bed

Name: William Hawksworth

Age: 35.

Occ. Table blade striker.

Date of admission: March 17. 1891



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

1891.

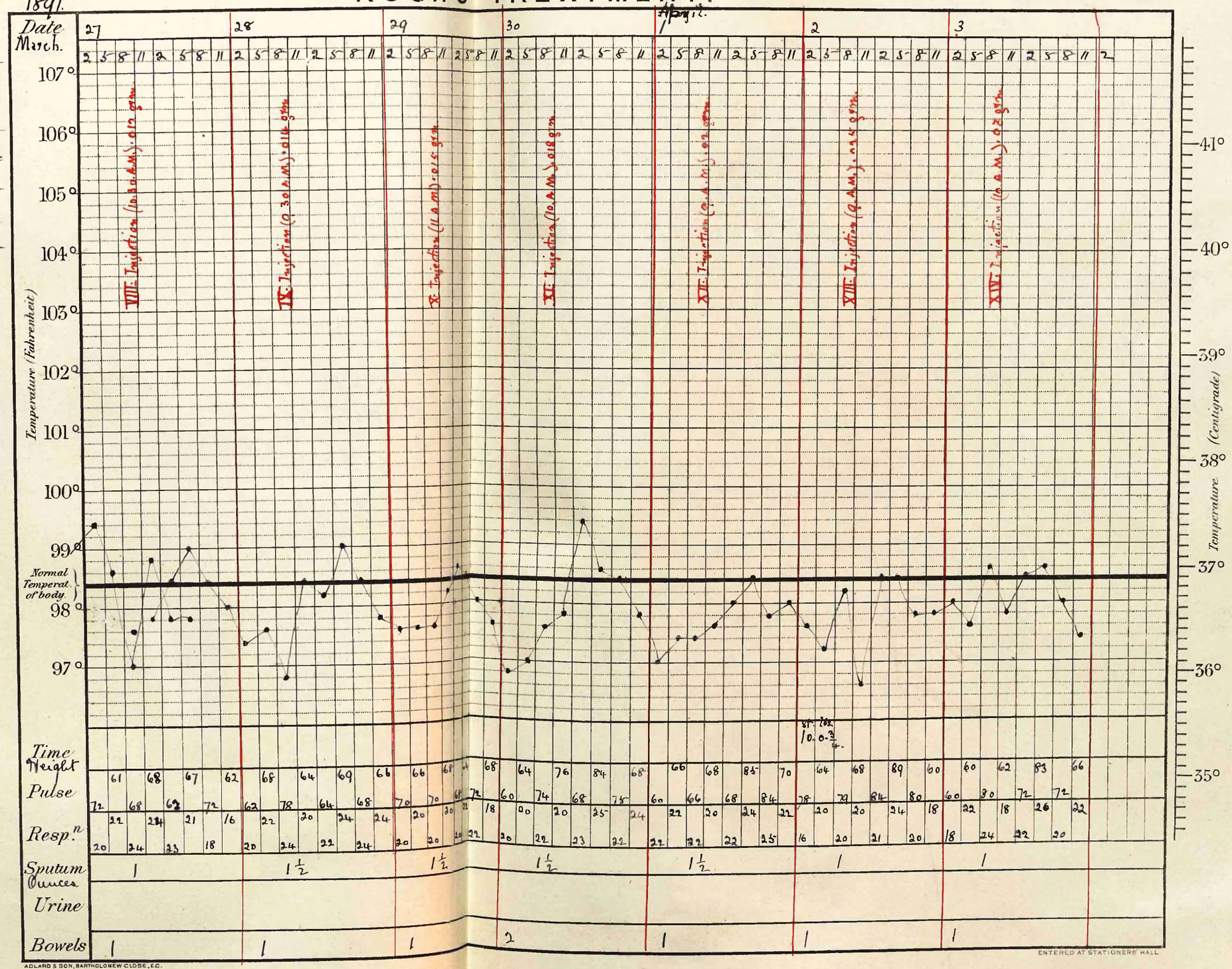
No. of bed

Name: William Hawksworth

Age: 35

Occ. Table blade striker.

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

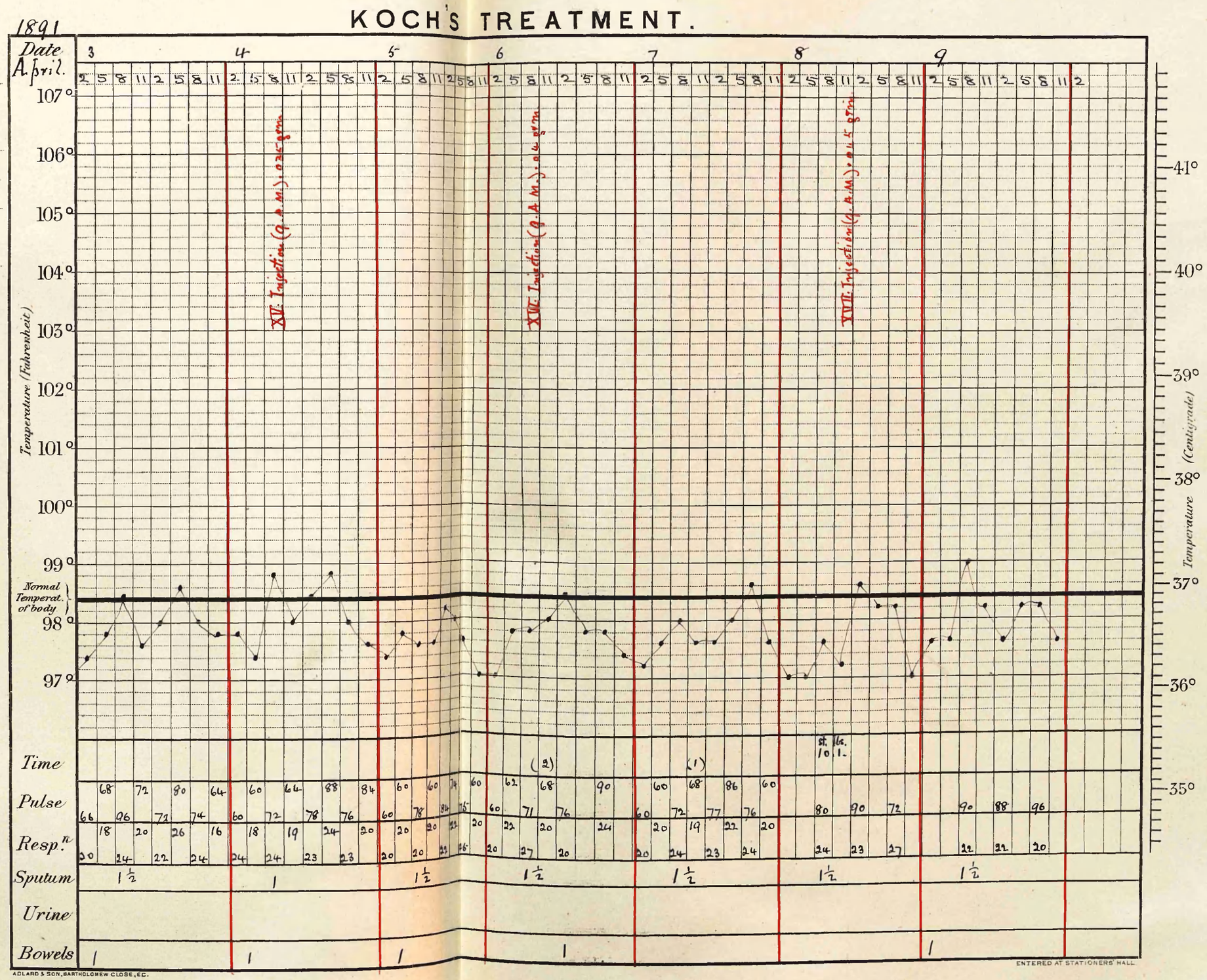
No. of bed

Name: William Hawksworth

Age: 35

Occ. Table blade striker.

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

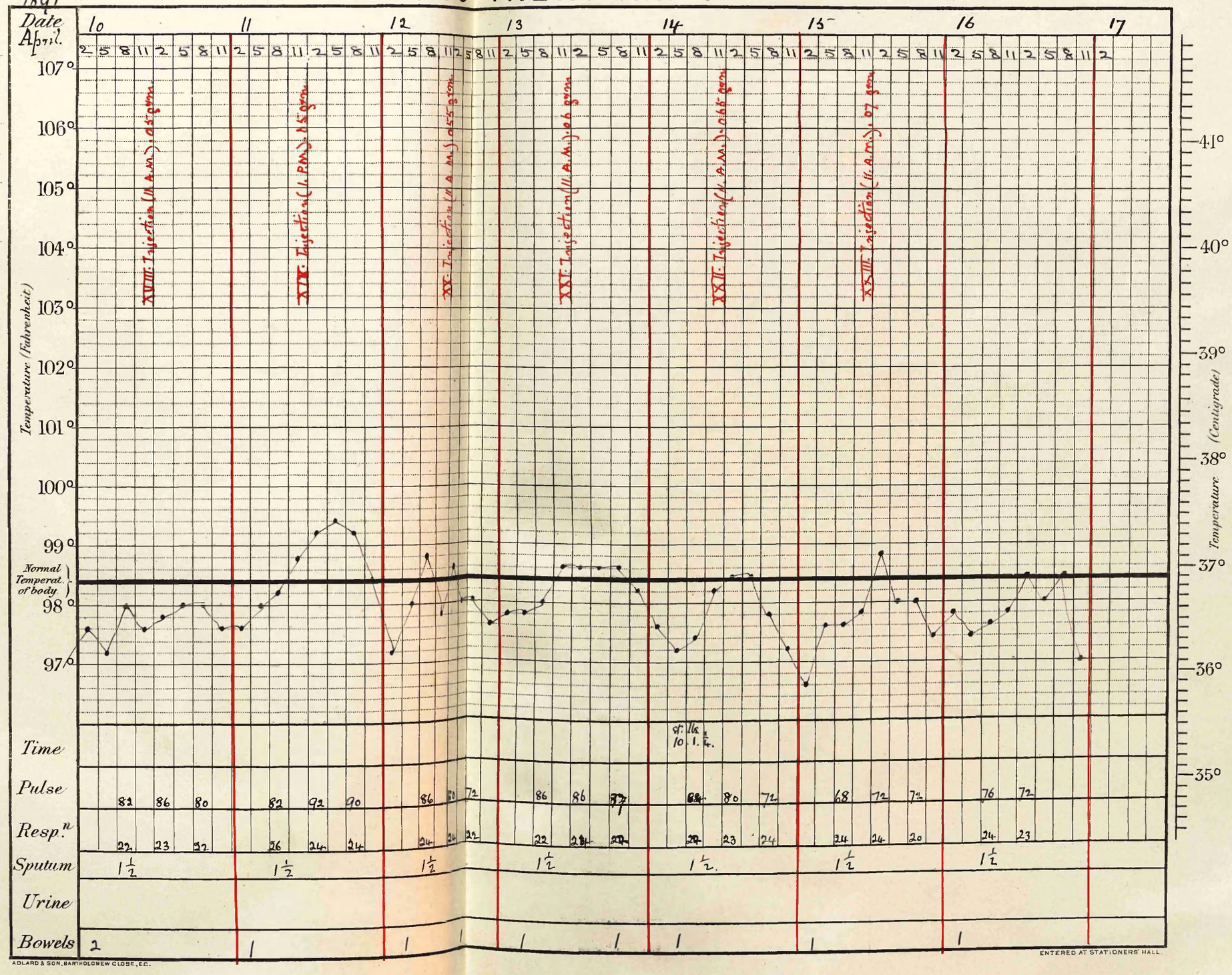
No. of bed

Name: William Hawksworth

Age: 35

Occ. Table blade striker.

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

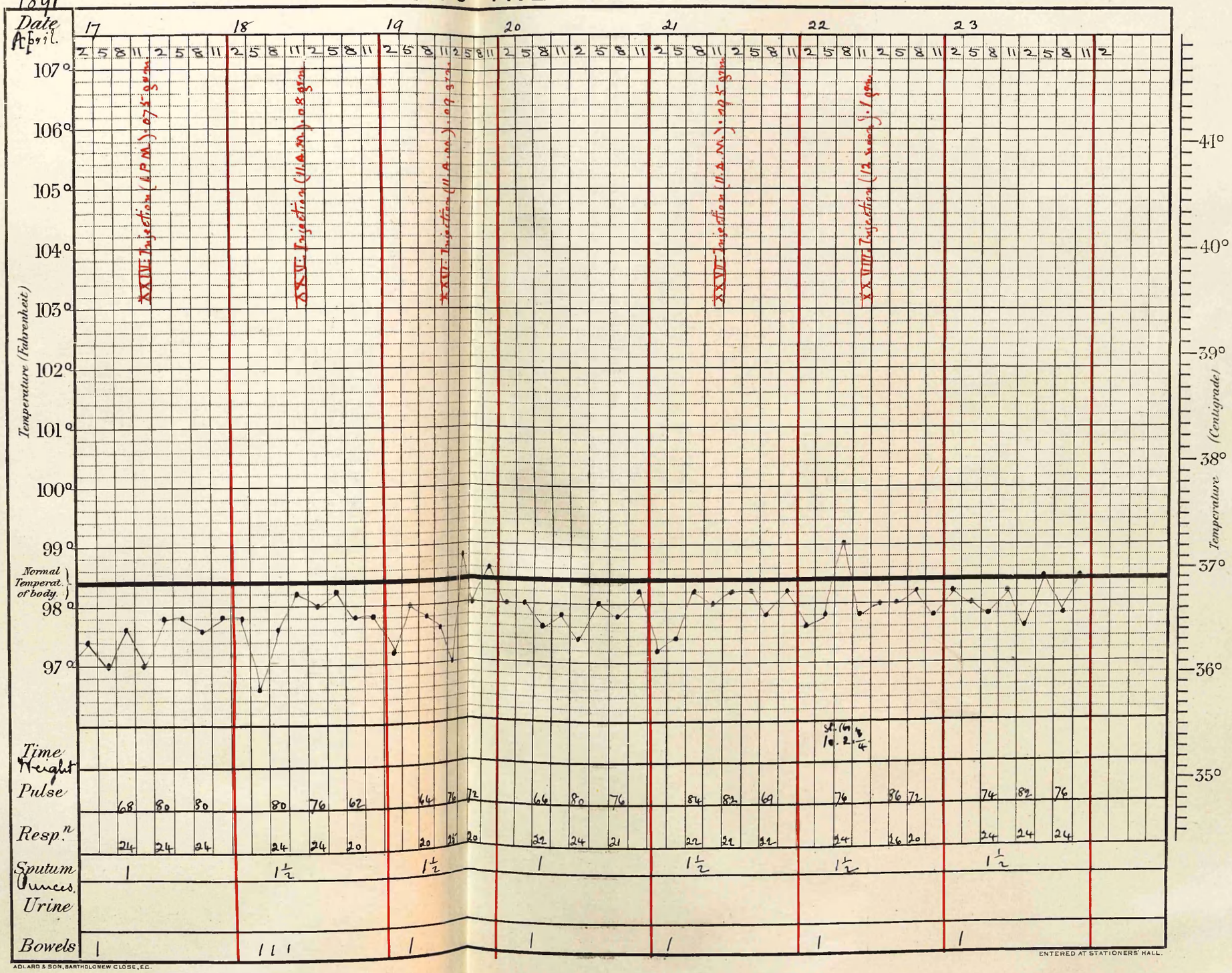
No. of bed

Name: William Hawksworth

Age: 35

Occ.: Table blade striker.

Date of admission: March 17. 1891



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

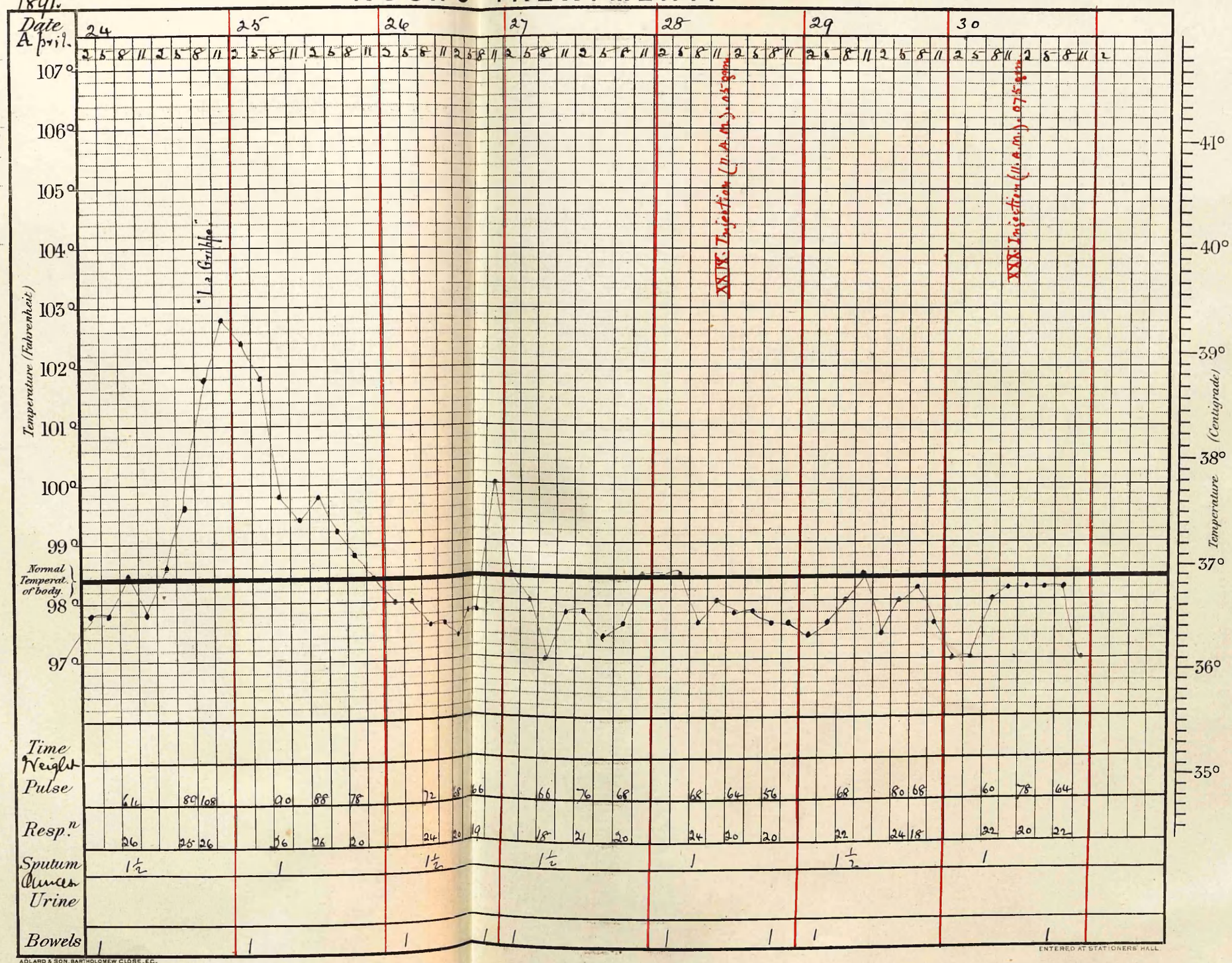
No. of bed

Name: William Hawksworth

Age: 35

Occ. Table blade striker.

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

KOCH'S TREATMENT.

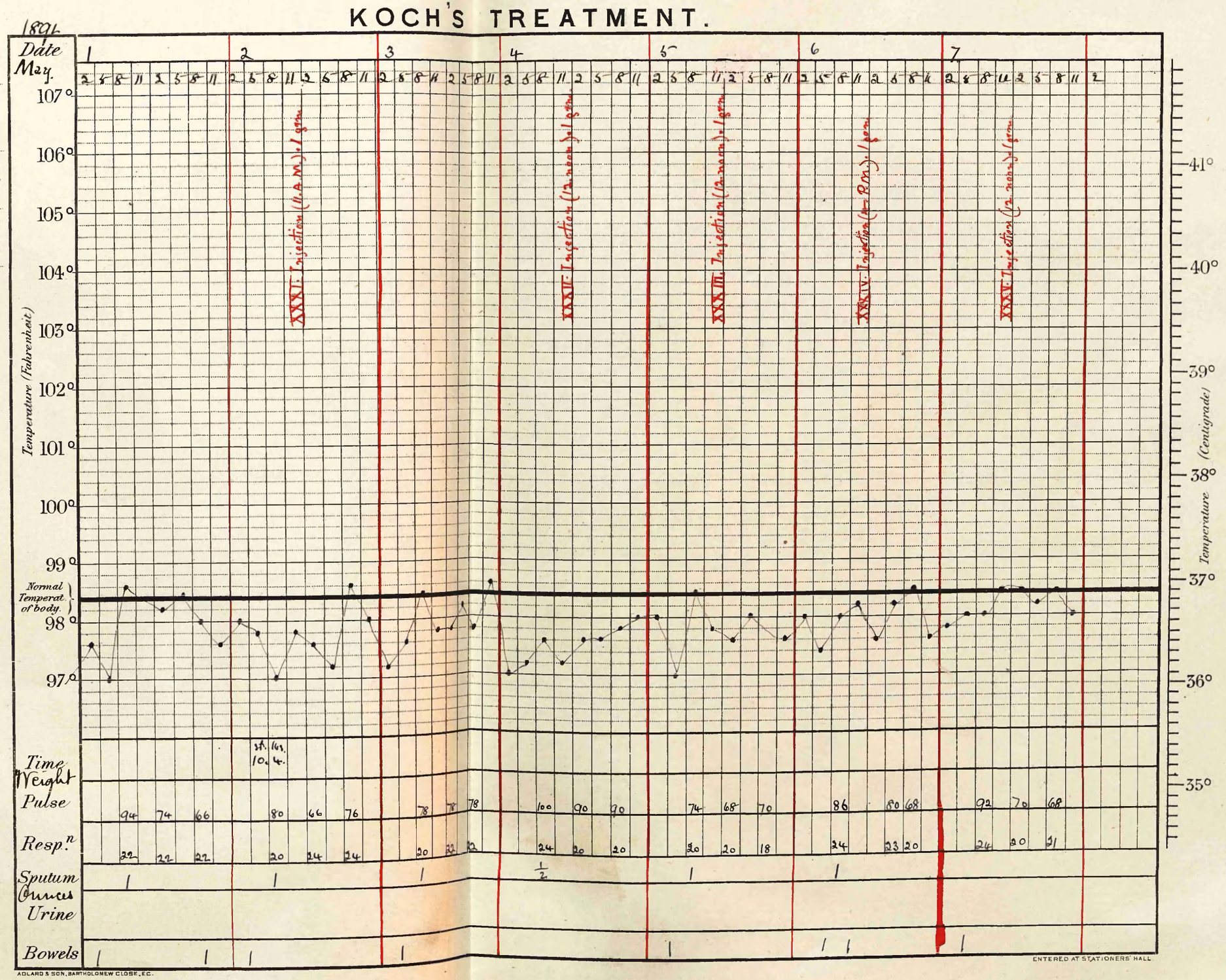
No. of bed

Name: William Hawksworth

Age: 35

Occ.: Table blade striker.

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

KOCH'S TREATMENT.

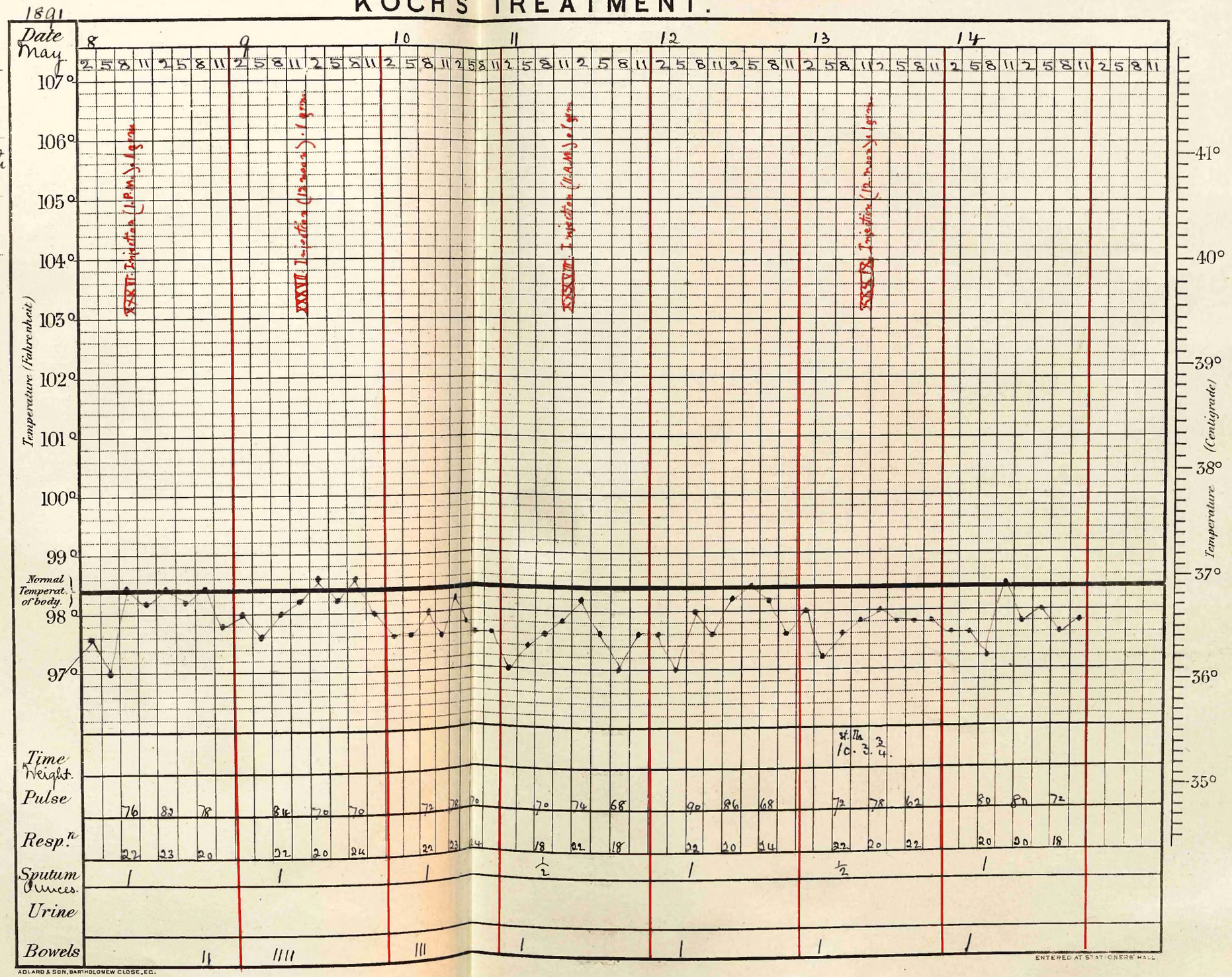
No. of bed

Name: William Hawksworth

Age: 35

Occ.: Table blade stroker.

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

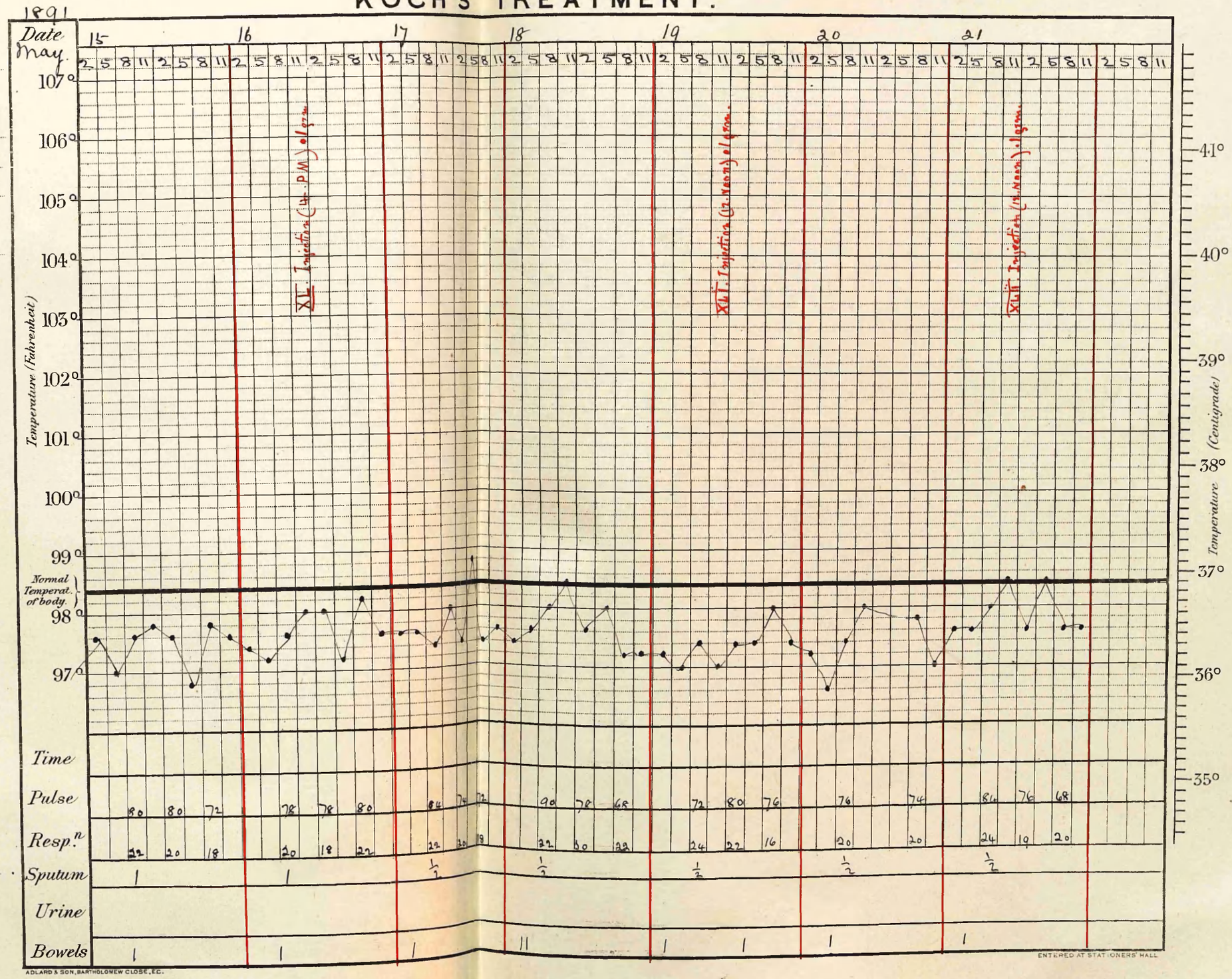
No. of bed

Name: William Hawksworth

Age: 36

Occ. Table blade striker.

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

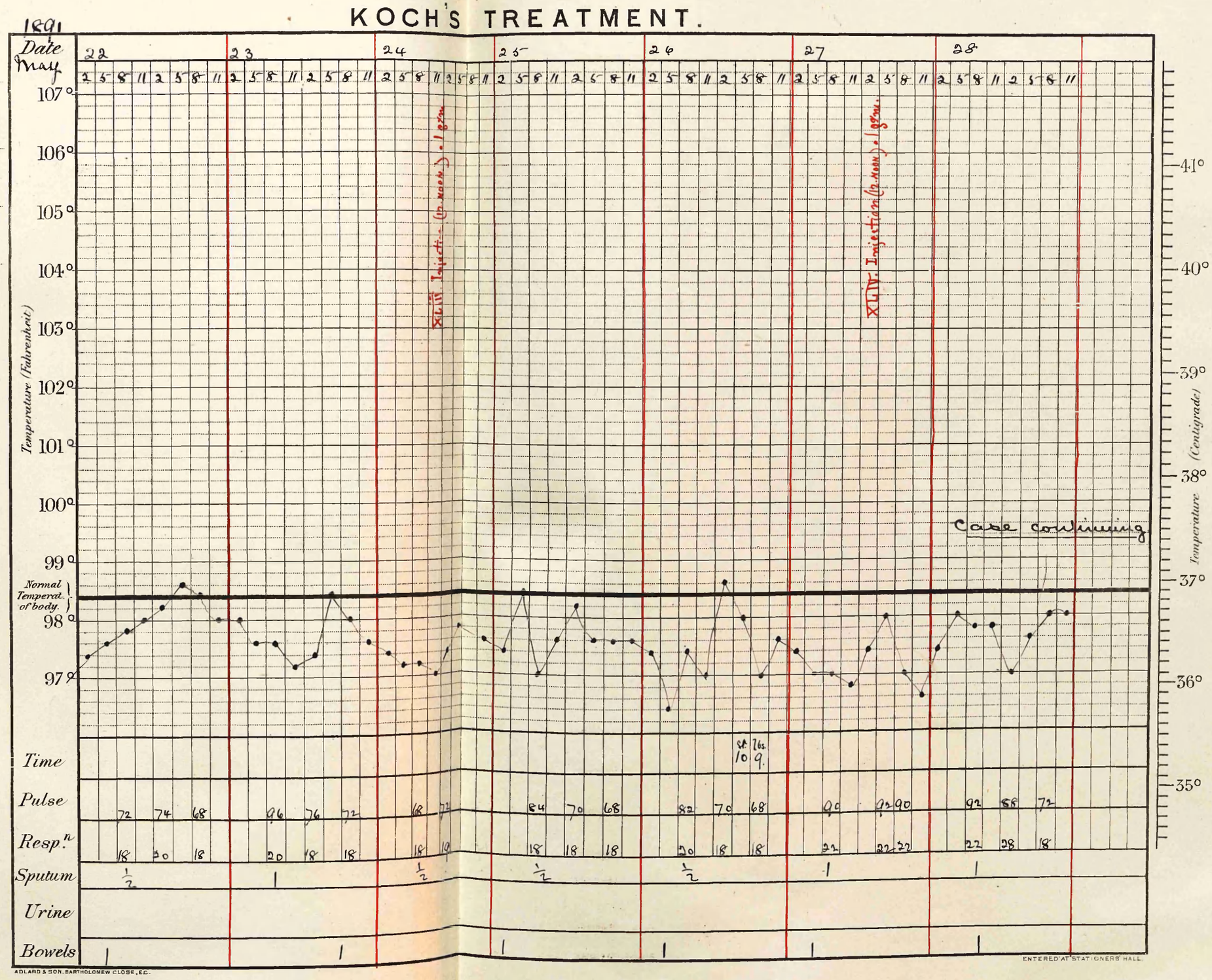
No. of bed

Name: William Hawksworth

Age: 35

Occ. Table blade striker

Date of admission: March 17. 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

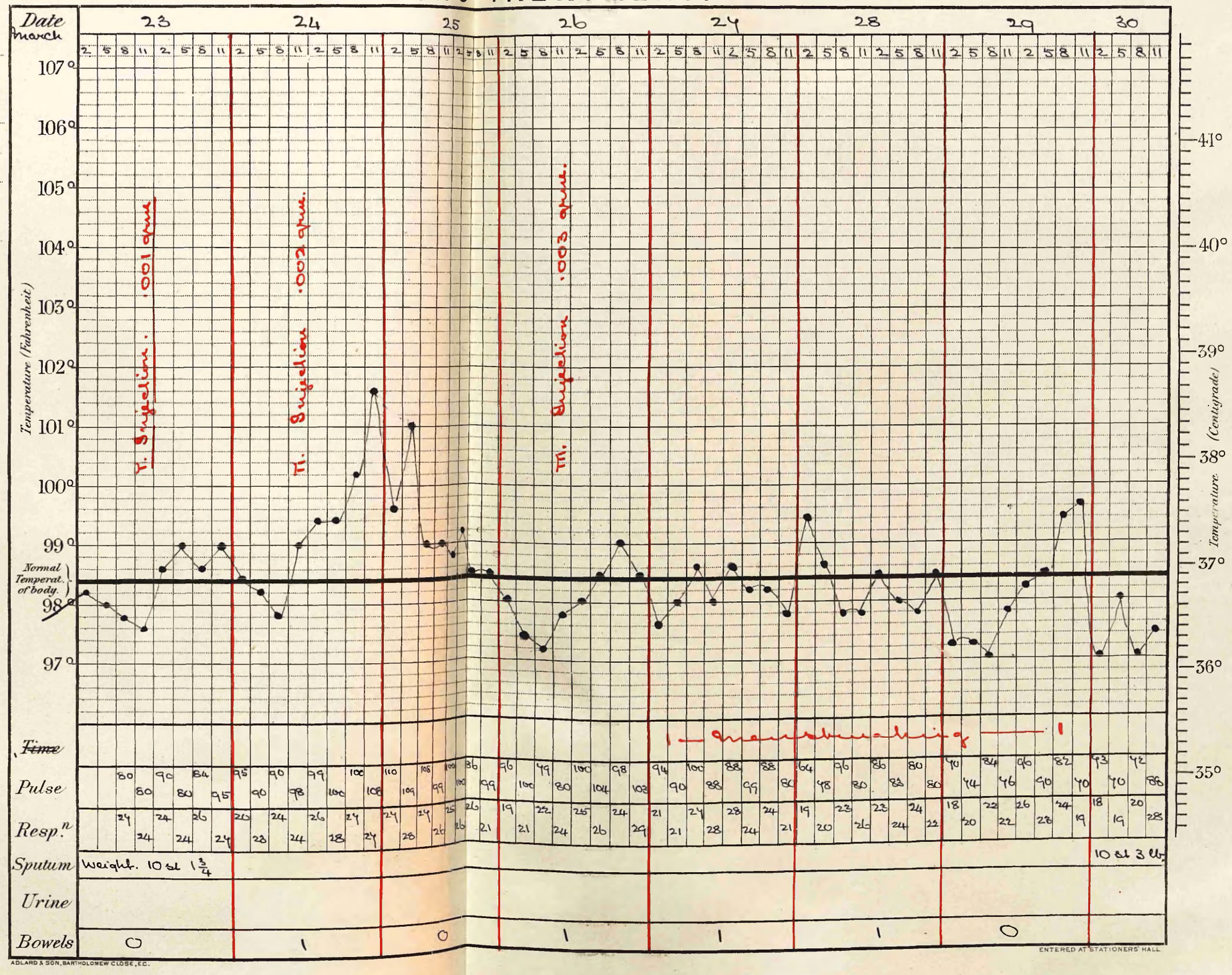
KOCH'S TREATMENT.

No. of bed

Name: Eliza Wilson

Age: 19.

Date of admission: March 6th 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

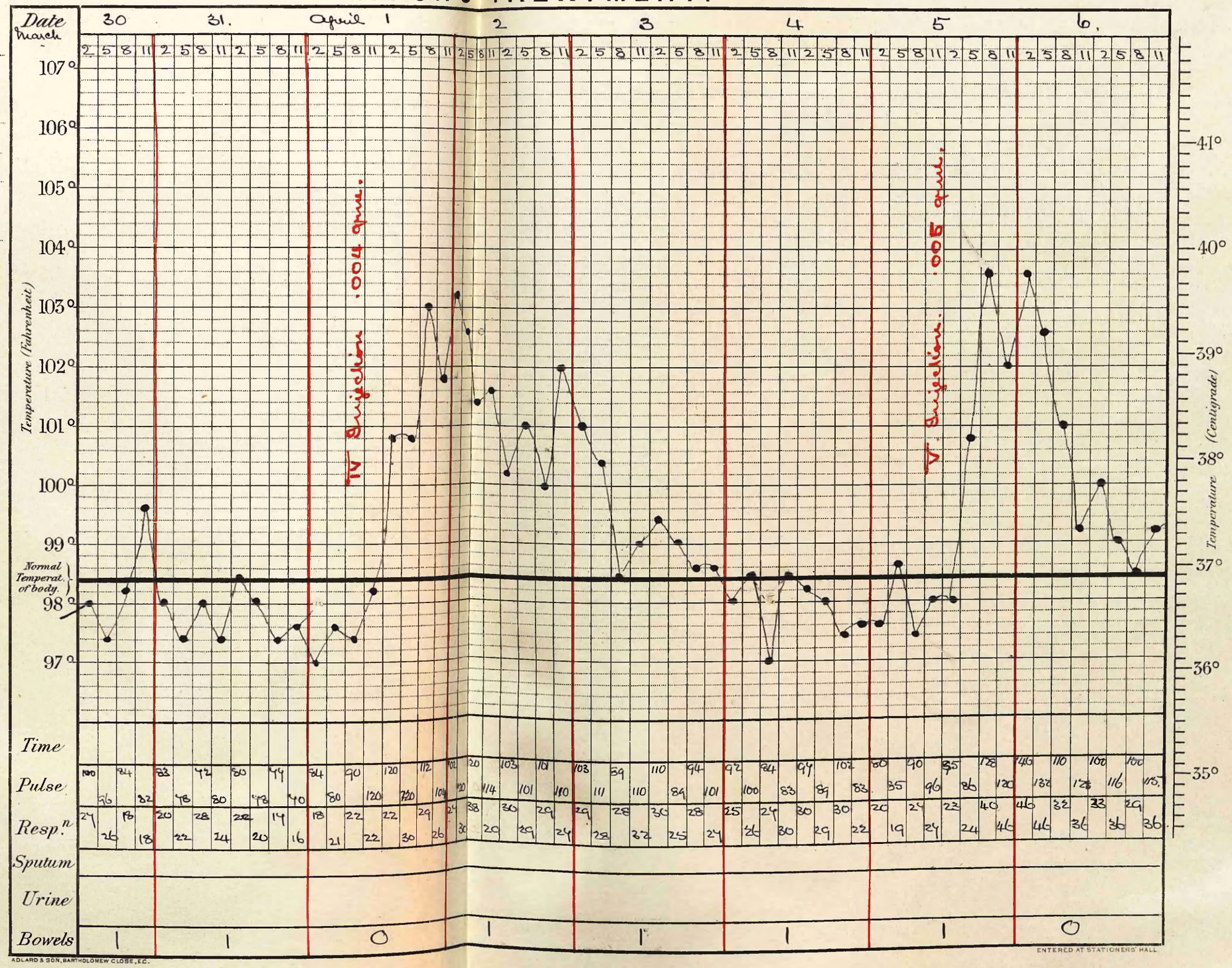
KOCH'S TREATMENT.

No. of bed

Name: Eliza Wilson

Age: 19.

Date of admission: March 6th 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

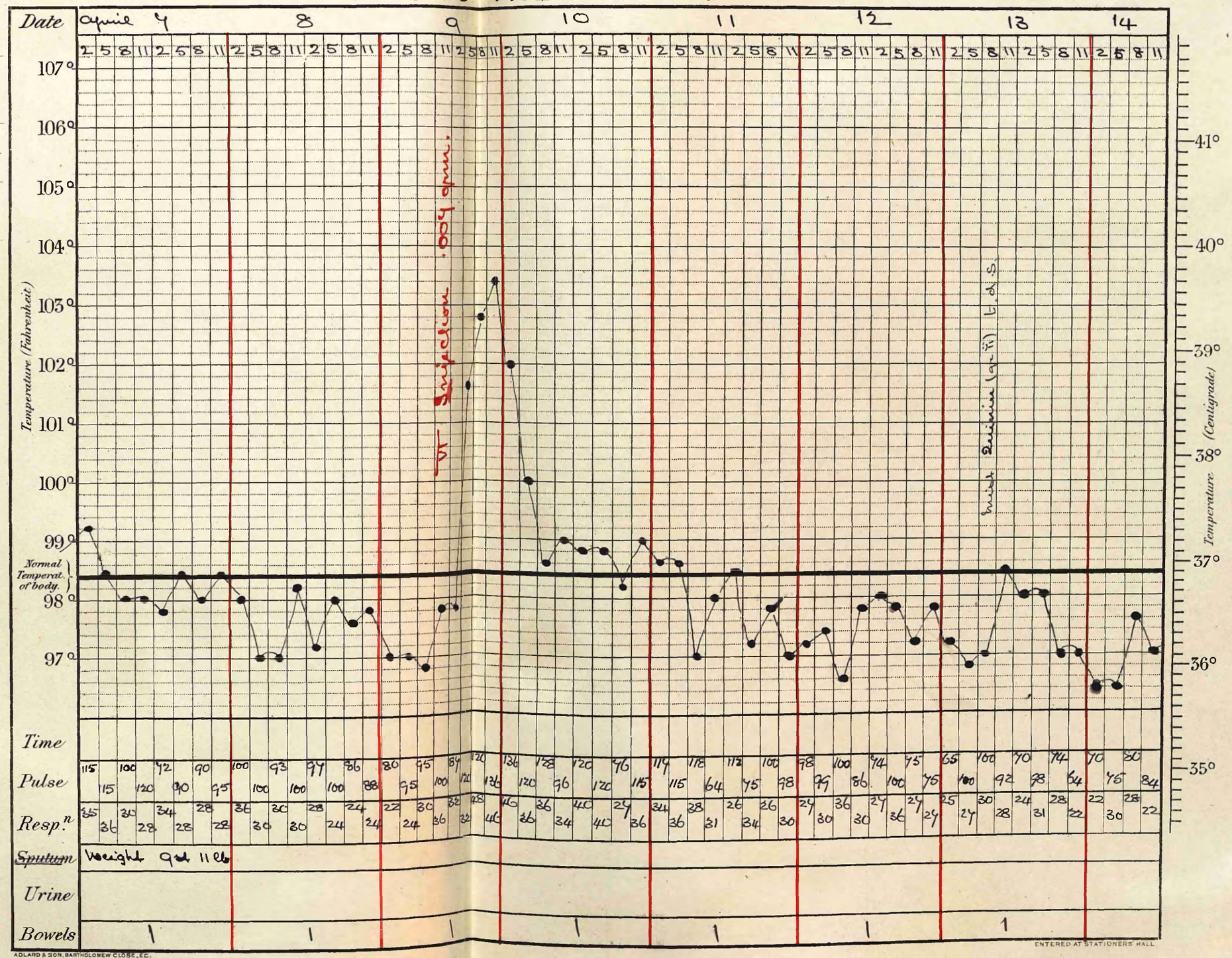
KOCH'S TREATMENT.

No. of bed

Name: Eliza Wilson

Age: 19.

Date of admission: March 6th 1891.



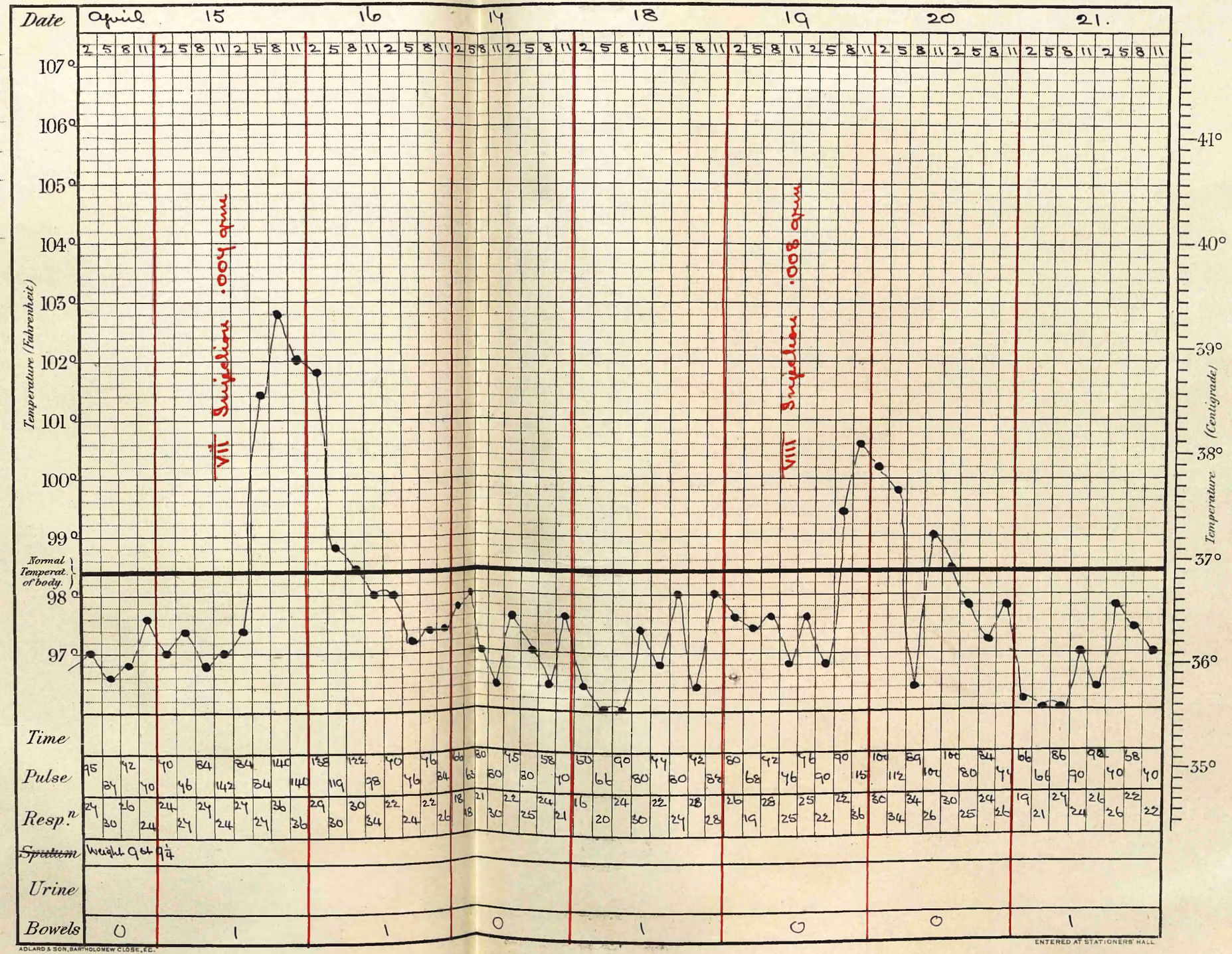
KOCH'S TREATMENT.

No. of bed .....

Name Eliza Wilson

Age 19.

Date of admission March 6th 1891.



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

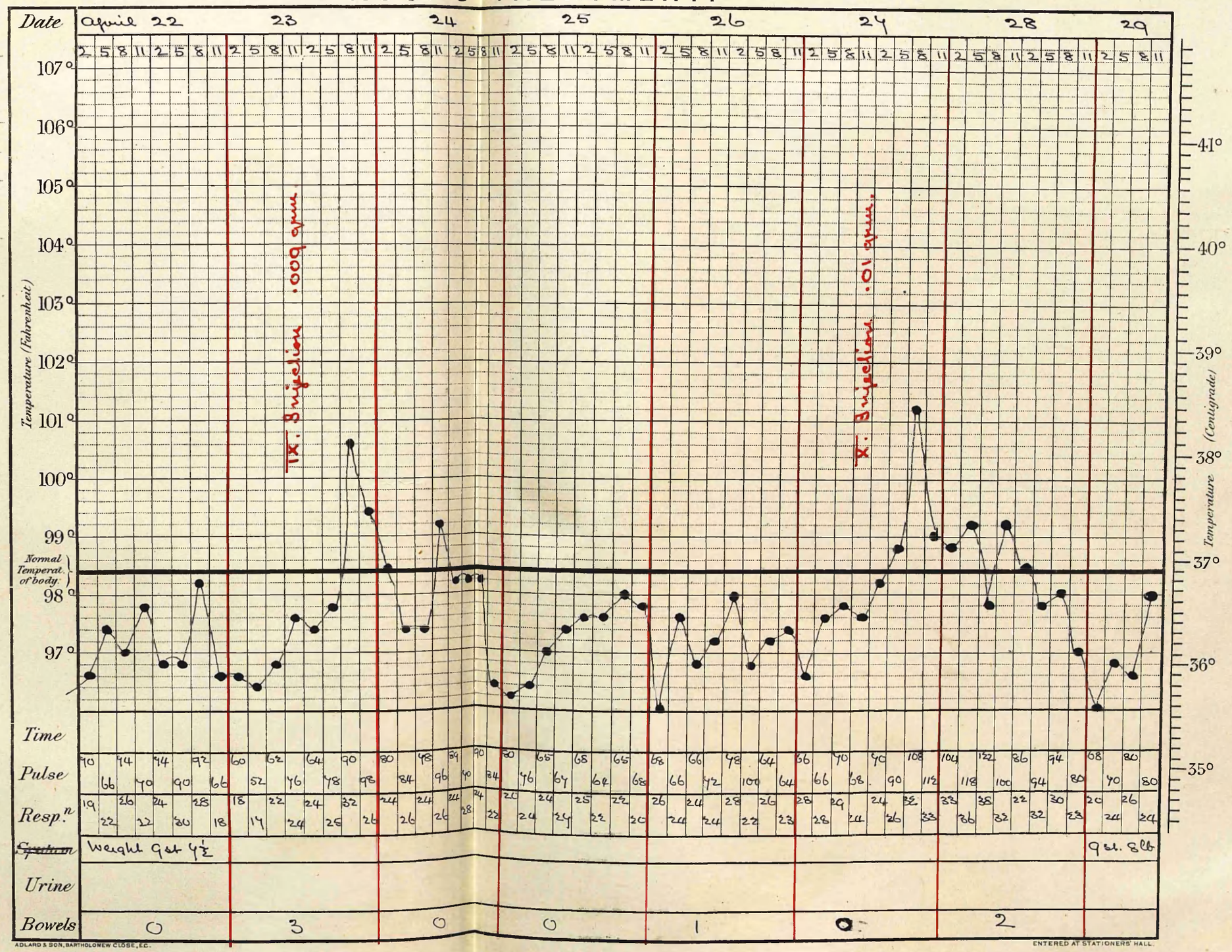
KOCH'S TREATMENT.

No. of bed

Name: Eliza Wilson

Age: 19.

Date of admission: March 6th 1891



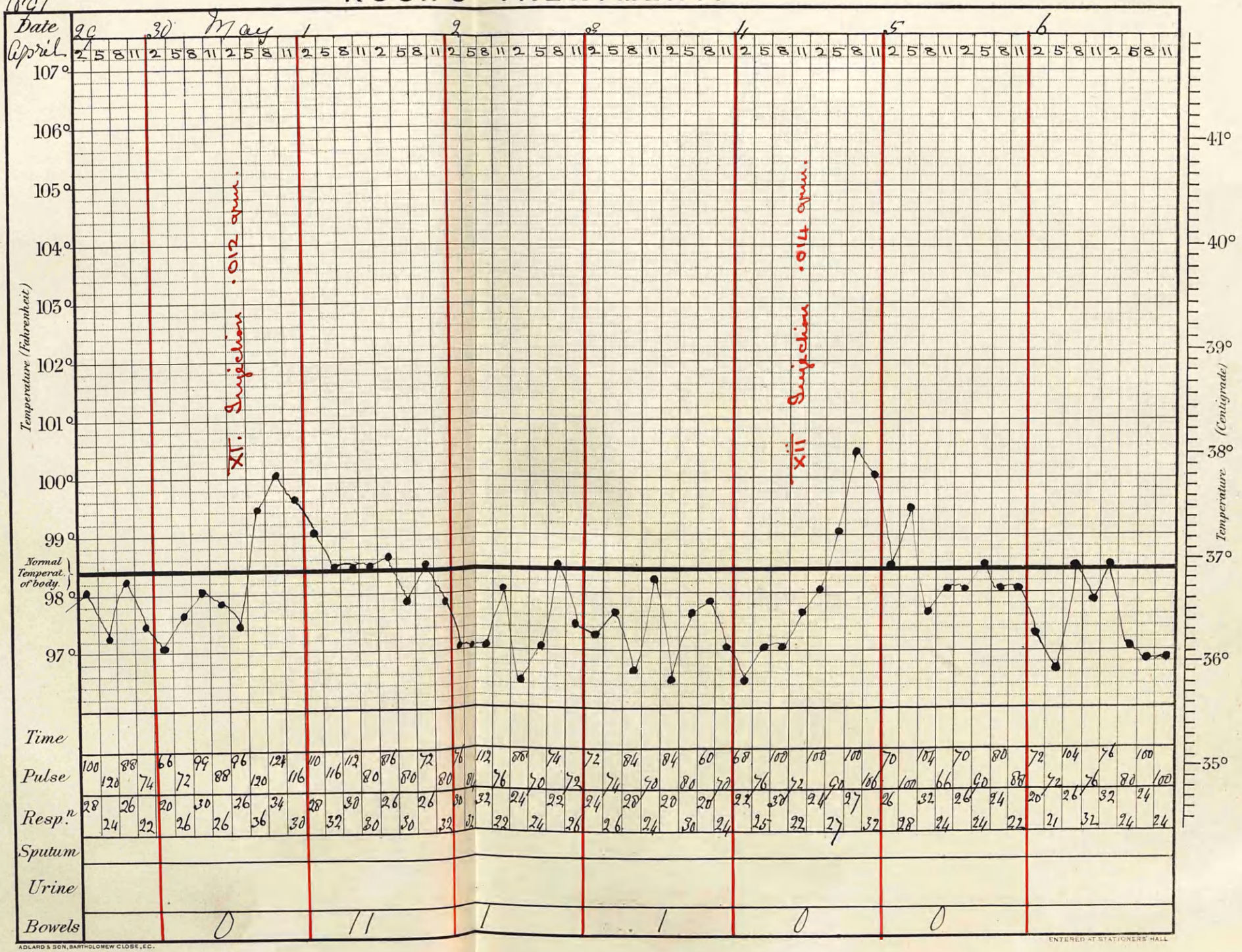
KOCH'S TREATMENT.

No. of bed

Name: Eliza Wilson

Age: 19

Date of admission: Mar: 6th 1891



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL

KOCH'S TREATMENT.

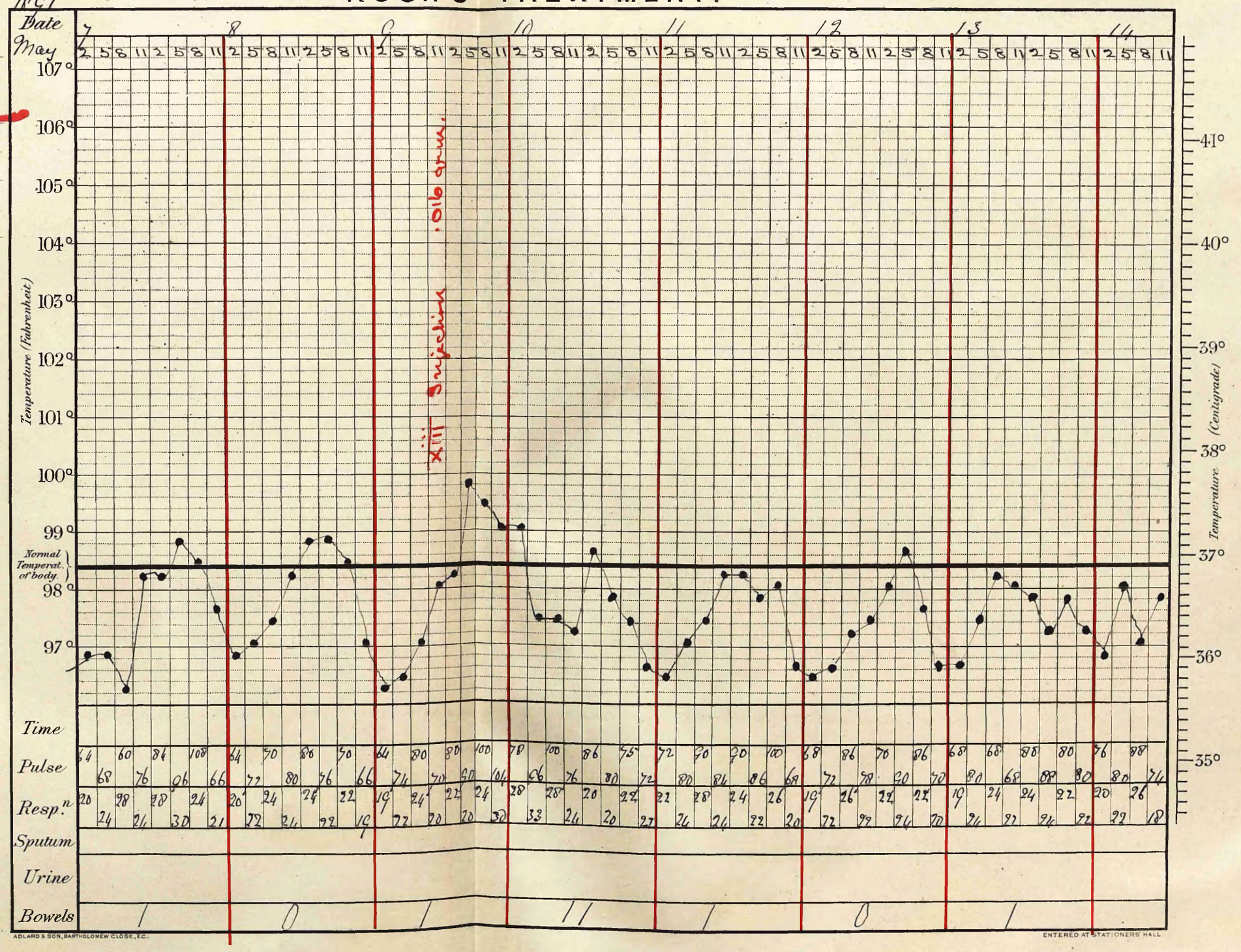
1891

No. of bed

Name: Eliza Wilson

Age: 19

Date of admission: Mar: 6th 1891



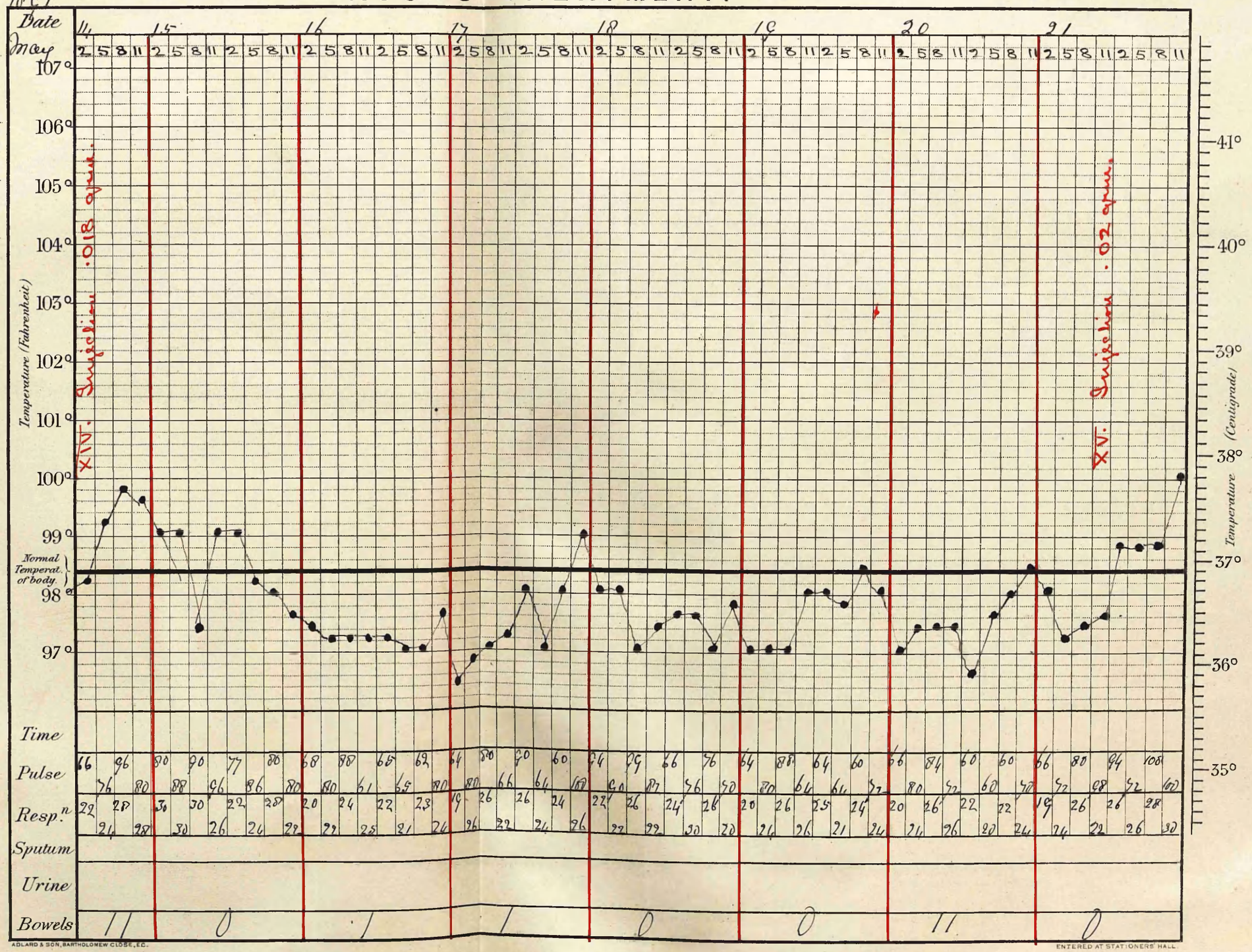
KOCH'S TREATMENT.

No. of bed –

Name { Eliza Wilson

Age 19

Date of admission Mar. 6th 1891



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.

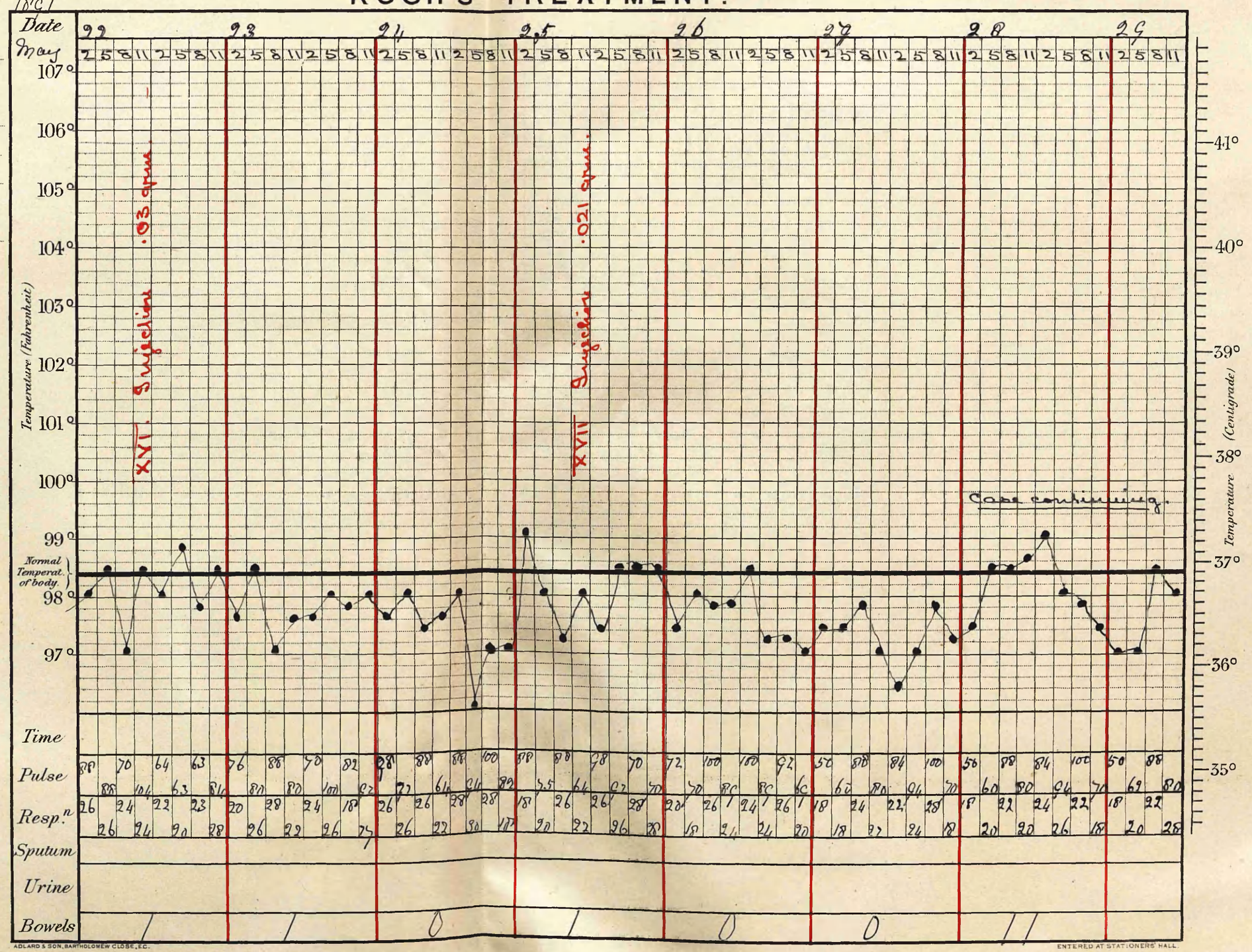
KOCH'S TREATMENT.

No. of bed

Name: Eliza Wilson

Age: 16

Date of admission: Mar: 6th 1891



ADLARD & SON, BARTHOLOMEW CLOSE, E.C.

ENTERED AT STATIONERS' HALL.