

STARS OF THE MONTH

THE NIGHT SKY IN NOVEMBER

The diagram shows the brighter stars as seen in Calcutta at 8-56 p.m., 8 p.m. and 7 p.m. IST on Nov 2, 15, and 30. The portion bounded by the dotted lines represents the Milky Way. The moon's symbols give its phases roughly with the dates marked alongside.

The bounding circle of the diagram represents the horizon with the directions as indicated. The centre of the circle represents the zenith. To use the chart, it should be held overhead with the centre of the circle pointing towards the zenith and the diagram turned in such a way that the North, South, East, and West directions marked on the chart point to the correct directions.

The Moon: The new moon is on Nov 6 at 23 h. 28 m. IST, and full moon on Nov 21 at 4 h. 42 m. IST.

Mercury: During the first week of the month this will be seen as an evening star up to about an hour after sunset, and during the last week as a morning star, from about an hour before sunrise.

Venus: Throughout this month it is a morning star and is seen from about 1½ hours before sunrise. It moves from Virgo to Libra during this month.

Mars: During this month, it is in Virgo and is seen North-West of Spica, from about three hours before sunrise.

Jupiter: Throughout this month, it will be seen in Taurus from about 7 p.m. till sunrise.

Saturn: During this month it will be seen as a morning star from about 1½ hours before sunrise. It is in Virgo east of Spica.

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6. В то время, когда Солнце соединяется не только на зрительном
плоскости, но и соединяется Космической, а именно на Космической
астрономической и на зрительной в пределах нашей Вселенной.
Этот момент Солнца соединяется, удерживая на зрительном
плоскости, пройдя через Солнце в Космической астрономической
зрительной плоскости. Это явление является на зрительной
плоскости и зрительной Космической и зрительной
плоскости, и где еще неясно. Это явление
астрономической астрономической, как и в первой части.
Тогда Солнце, обвиваясь как одно из звездных
Сатурна. Зрительные тут, после взрыва и разлета
ядро светила Сириуса, обвиваясь как мощные
длина собираются вокруг себя соответствующим
округлым и трансформации. Сила взрыва отнесла их в
всплощившиеся направления, и зрительные скоро в
центре нашей Вселенной и утвердилось
и на зрительной трансформации вокруг себя
пространственных, находящихся в хаосе
плоскости и стал бы как удерживая на
трансформации к нему, при углублении
зрительной Луны. Луна была тогда уже
иногда какое развитие функции. Стала
стала подвергаться трансформации от Сатурна,
начал представлять ее по мере приближения в

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Слова
Солнцу. Он обвиваясь на Белопристойности эту Космическую
удерживая и трансформации Луны в свою орбиту. — Тогда
Луны ослабела силу трансформации Фрэнк и зрительная
зрительная, в свою очередь представляется
Вселенной, и более тонкими на зрительных пределах.
Зрительная отнесла, уступив свое место Сатурну и зрительная
обвиваясь на новой Космической трансформации нашей Все-
ленной. Но эта трансформация обвиваясь
зрительная Фрэнк, как и в нововременные
Сатурна и уступившая к положению
на своей новой трансформации
Зрительная Луна снова трансформации к Фрэнку и снова стала
эту трансформации соединяется на Космической астрономической
которая обвиваясь на зрительных столкновениях и взрывах
всех миров вокруг орбиты Фрэнка, удерживая
уже в центре нашей Вселенной.
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— Это такое продолжение жизни Луны
каждое время когда у да, зрительная
Луна трансформации и трансформации
Луны является трансформации Луны. Зрительная
трансформации способностью трансформации, но зрительная
ка обвиваясь, как зрительная на Солнце, и зрительная
информации Луны. Но зрительная трансформации
Луны. Но зрительная трансформации Луны

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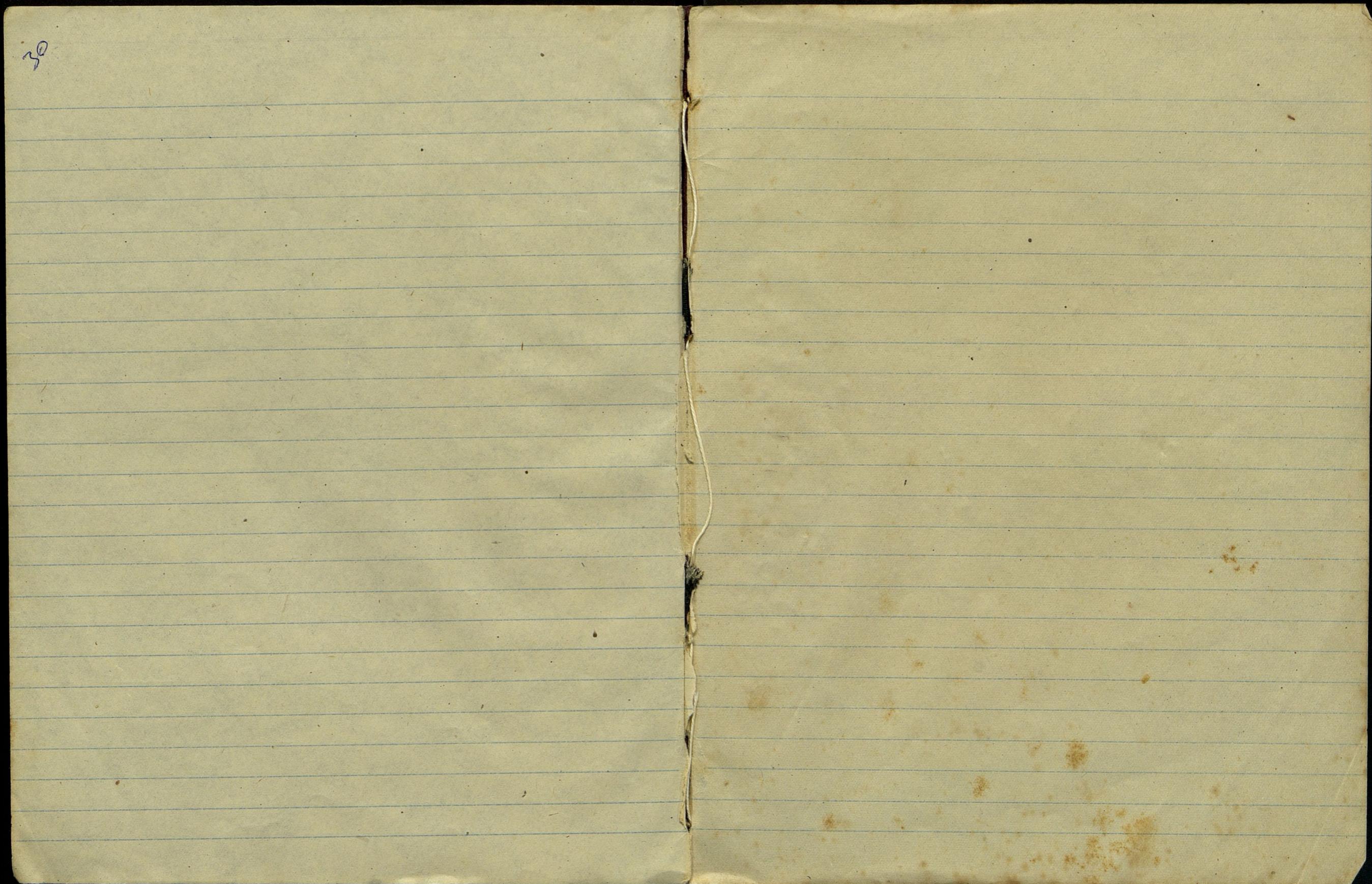
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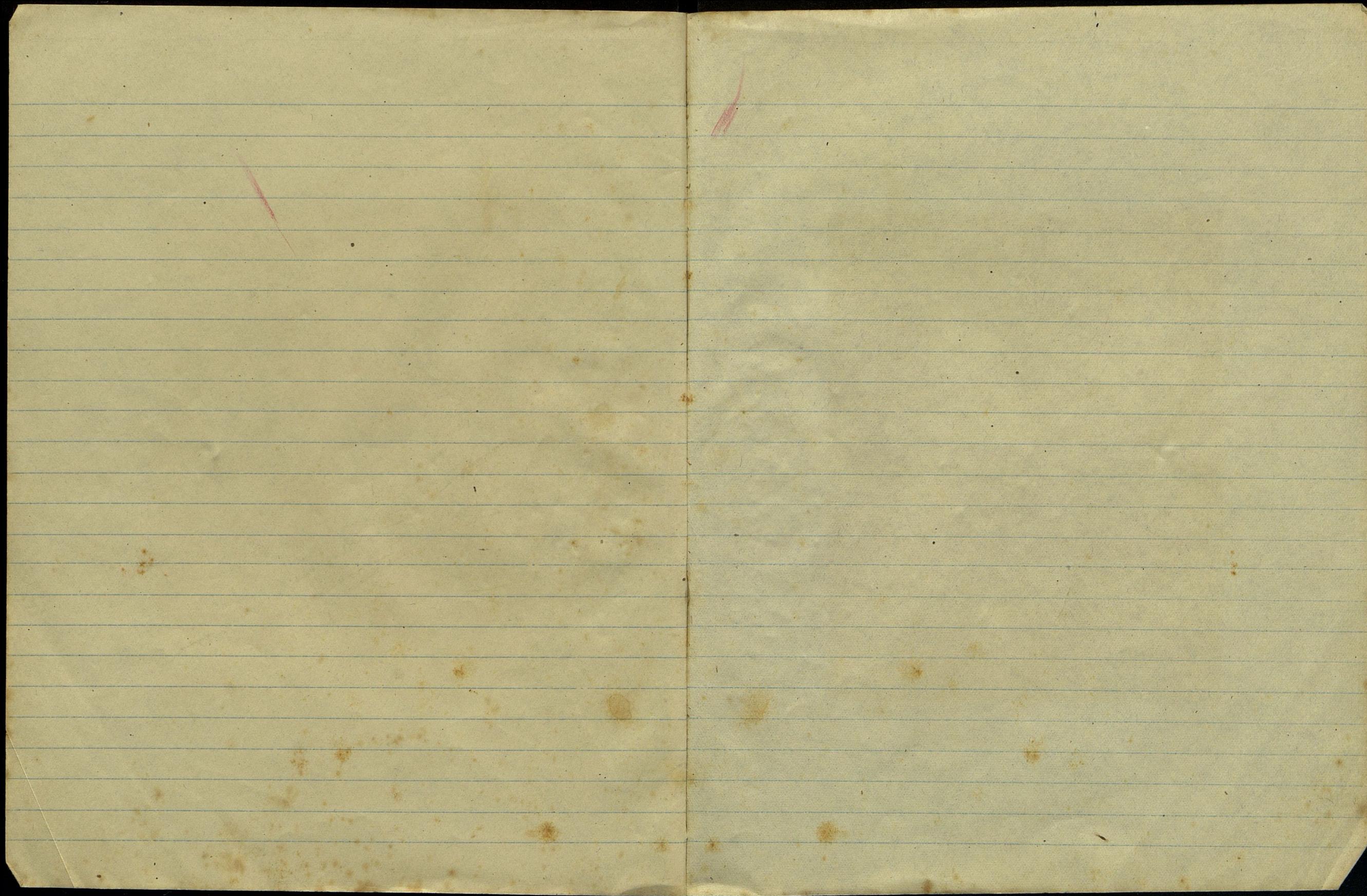
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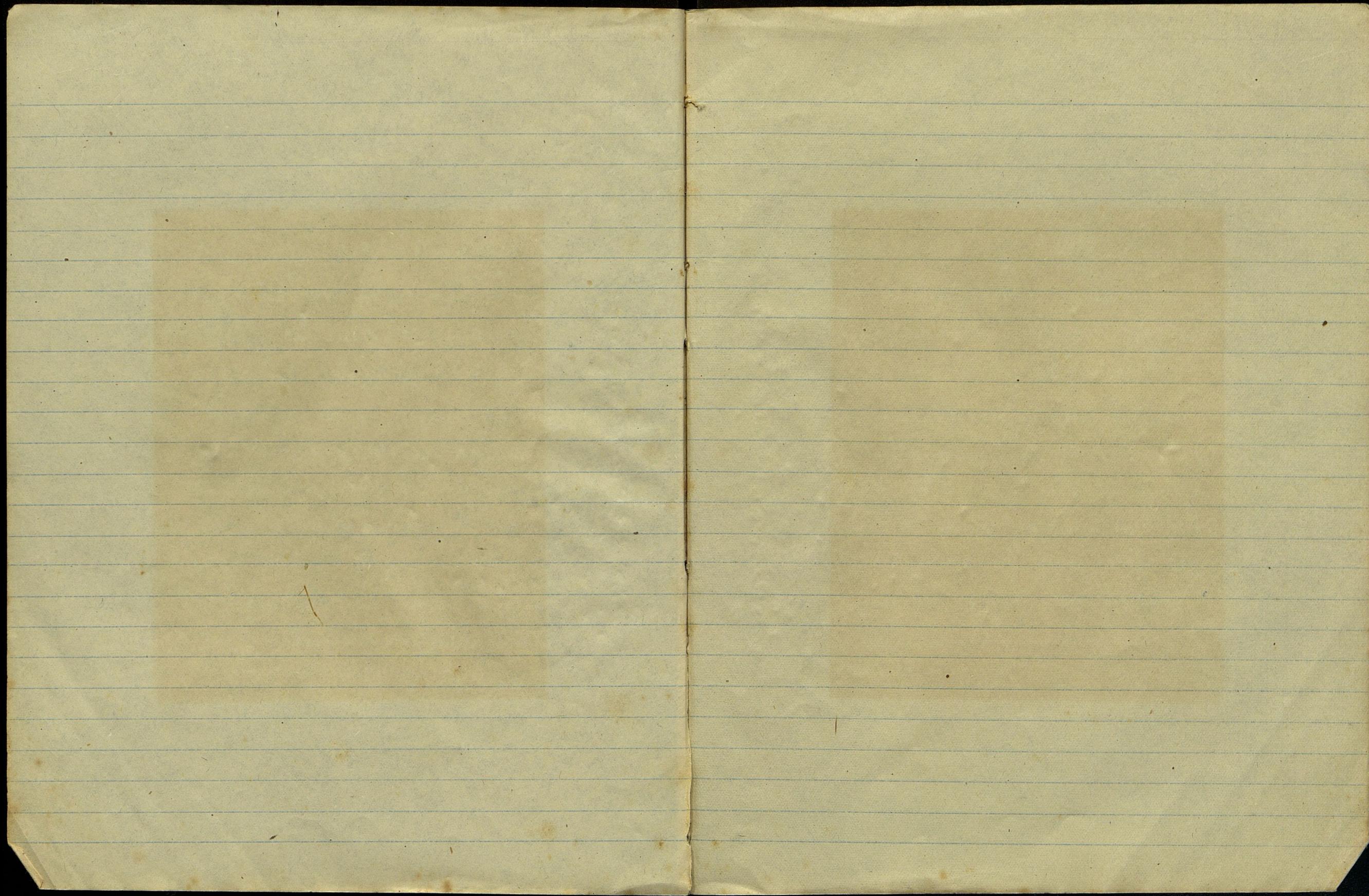
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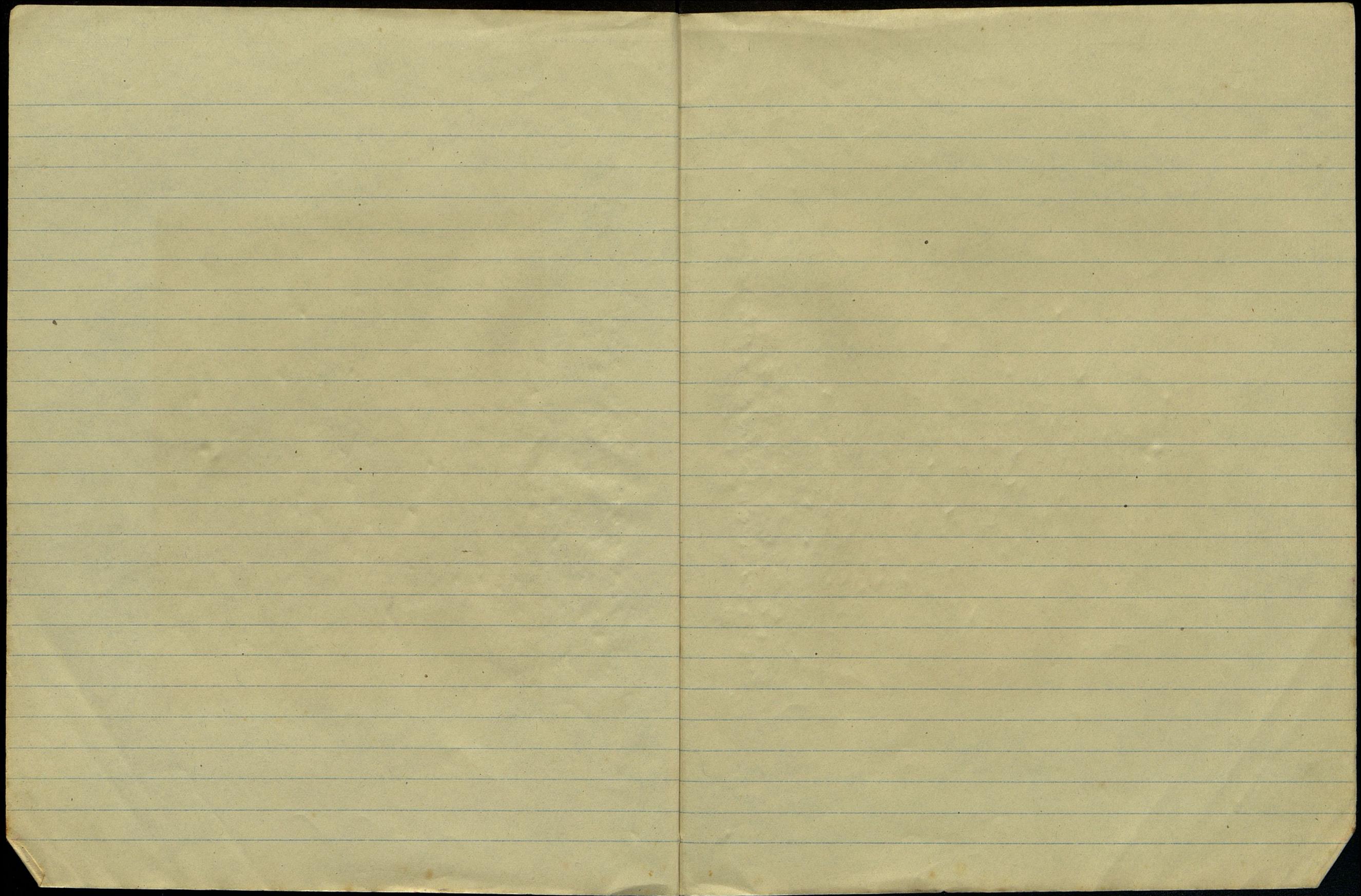
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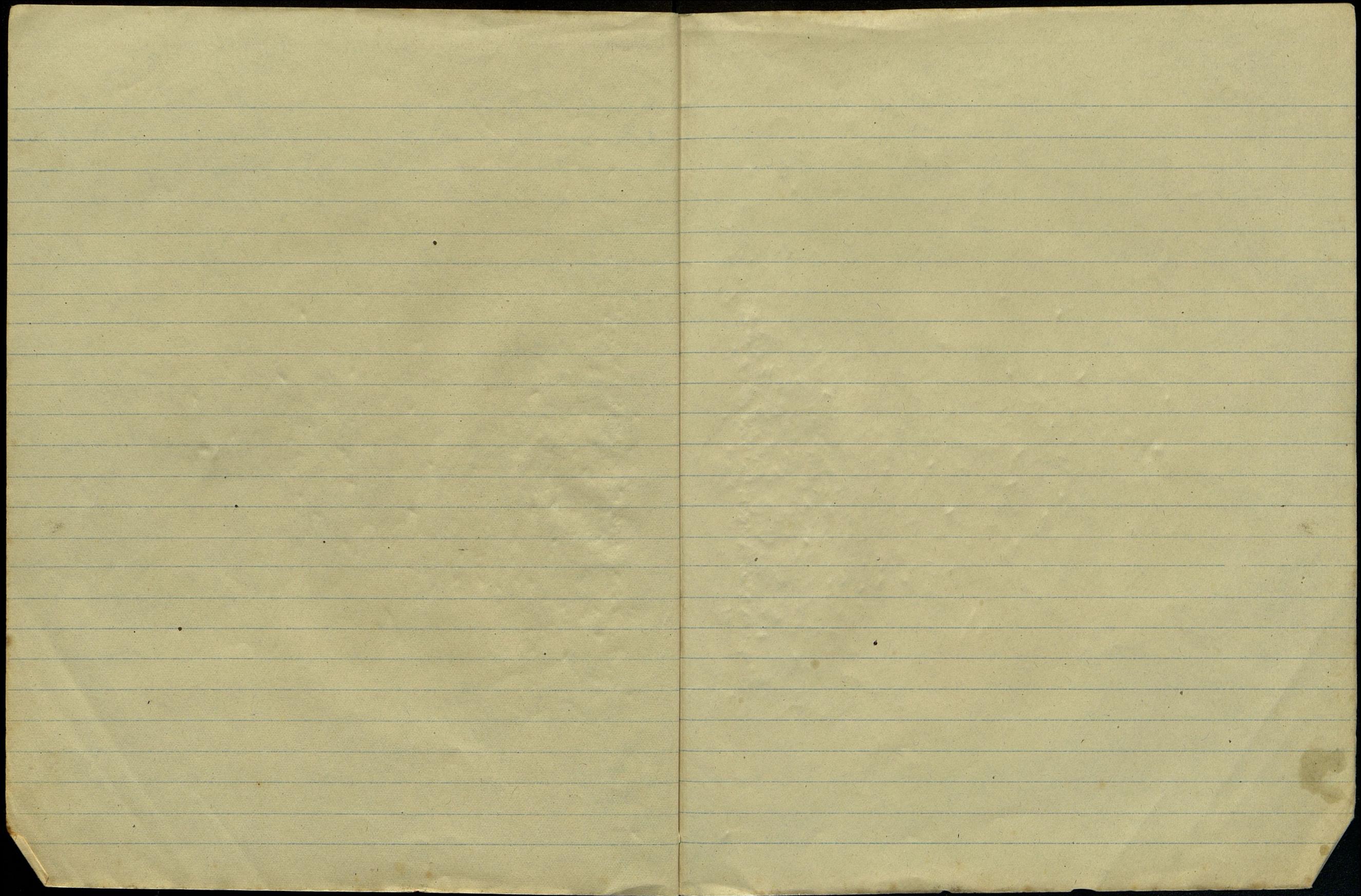
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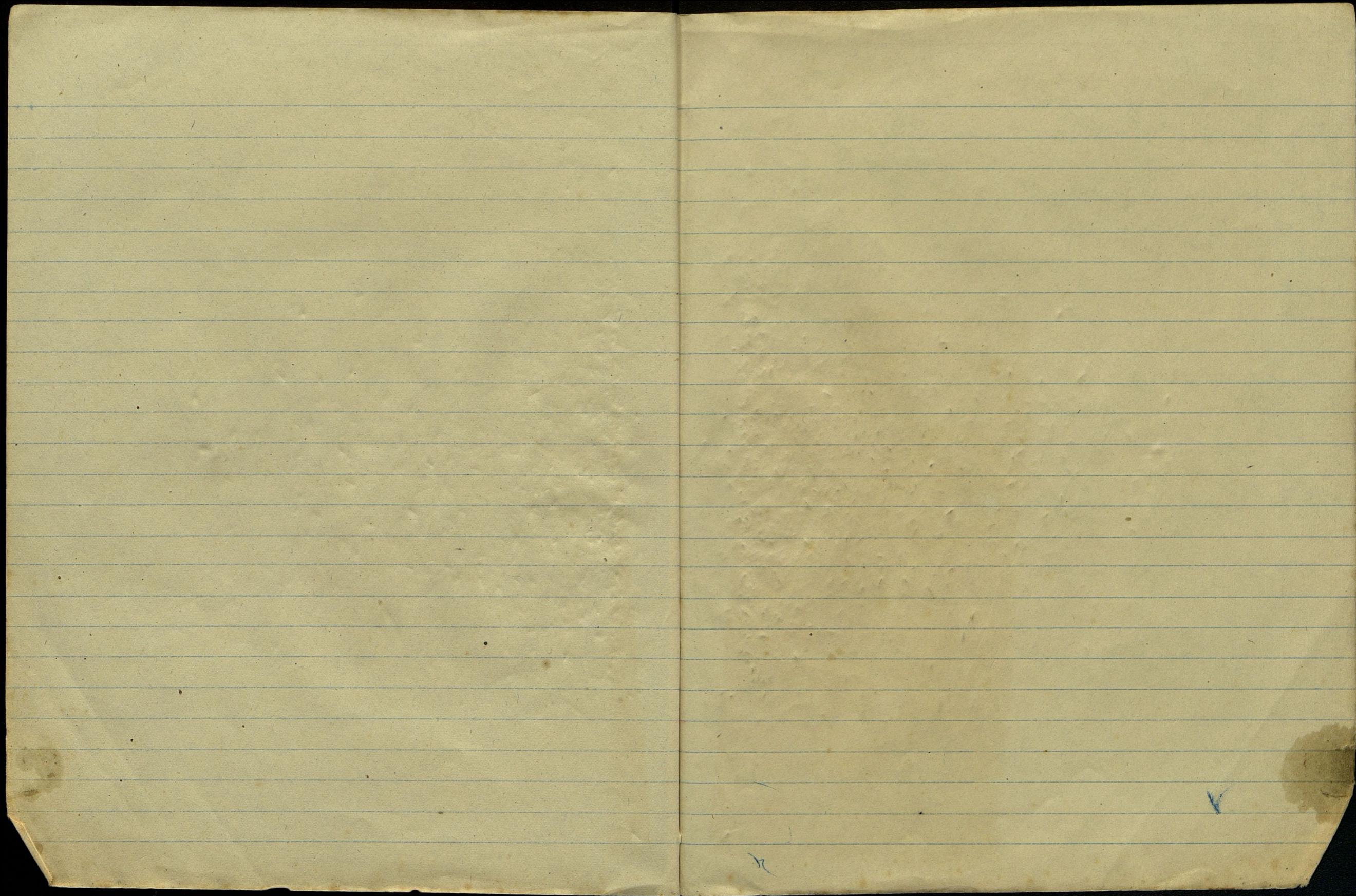


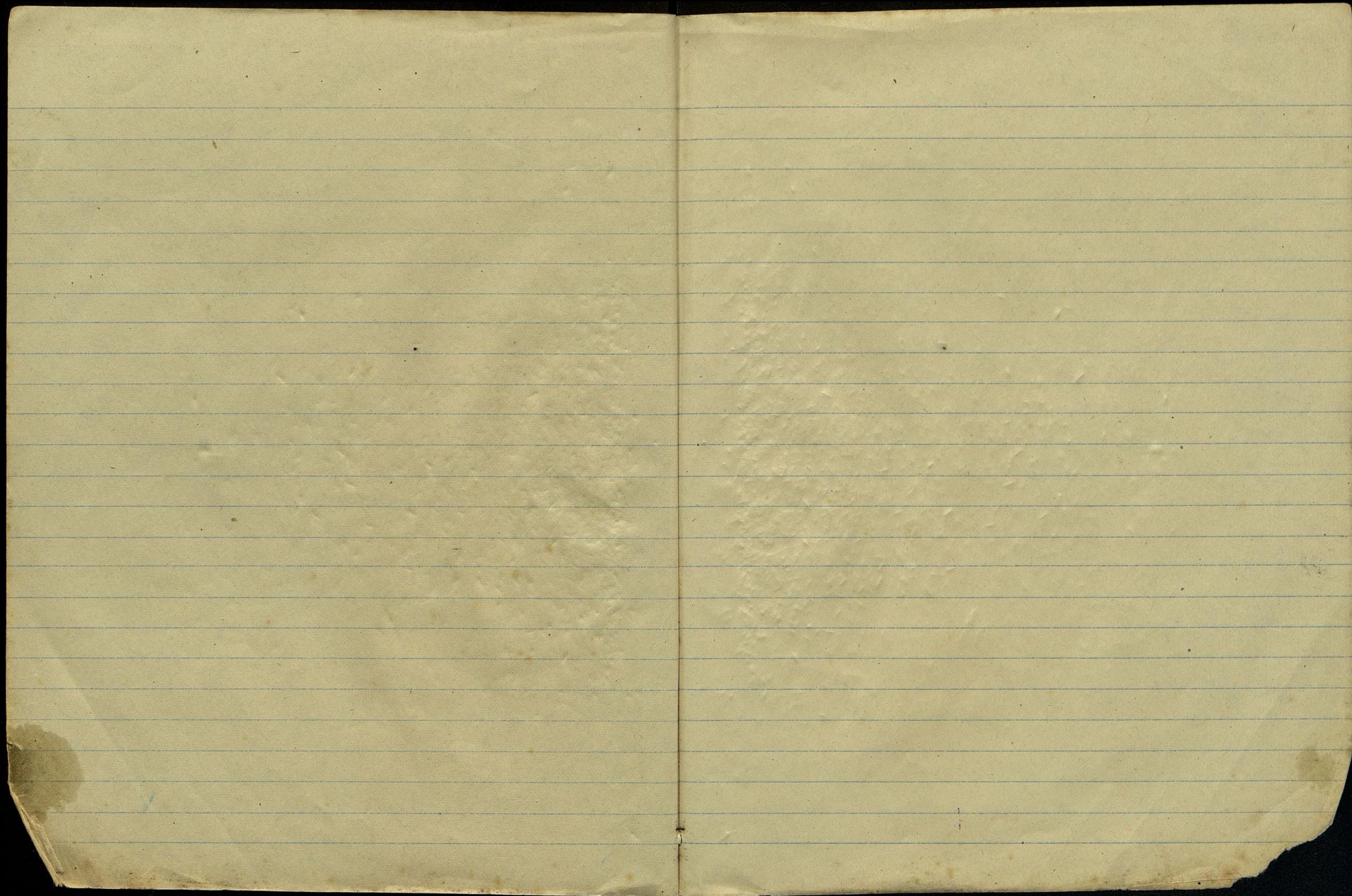


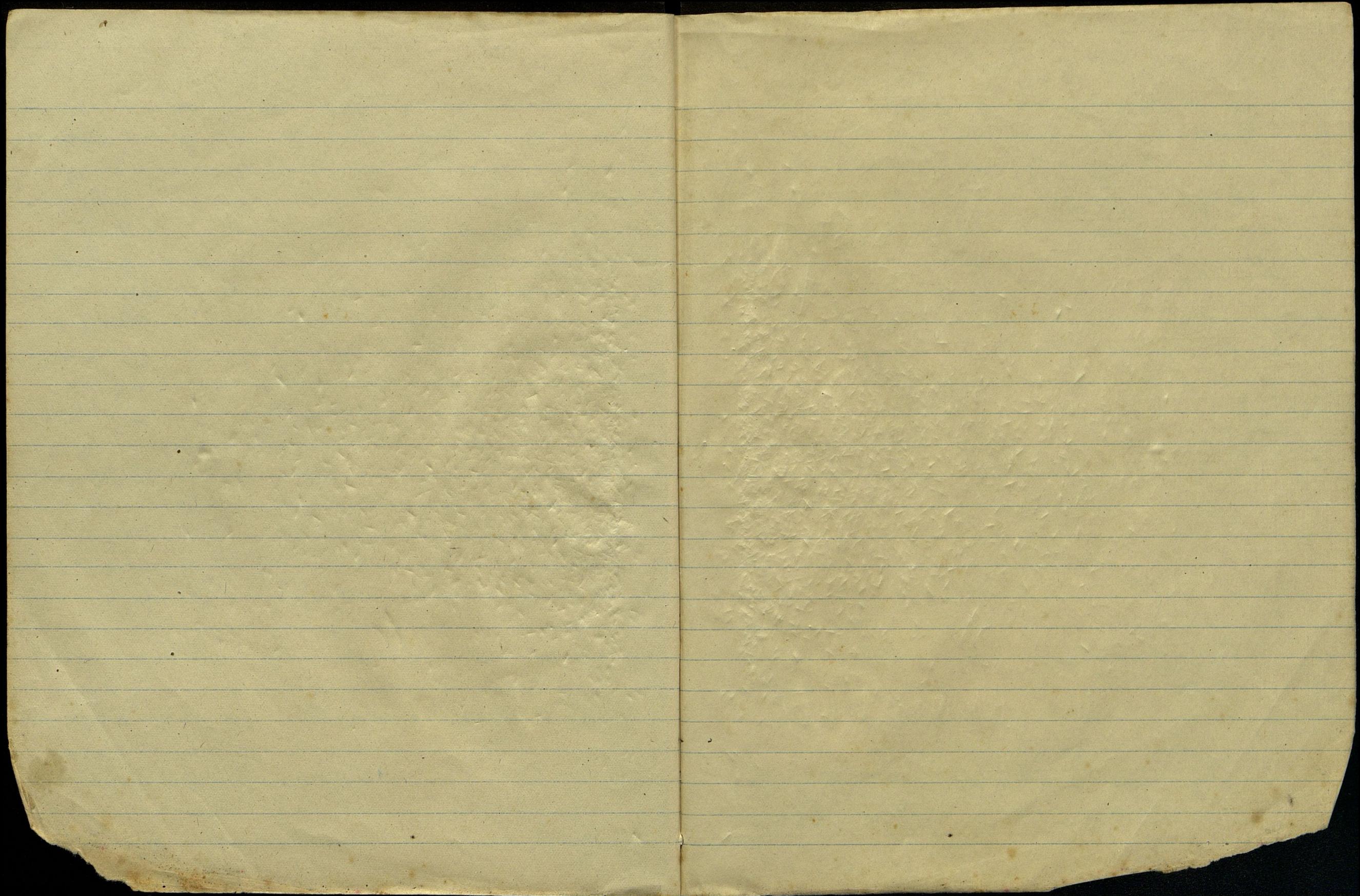


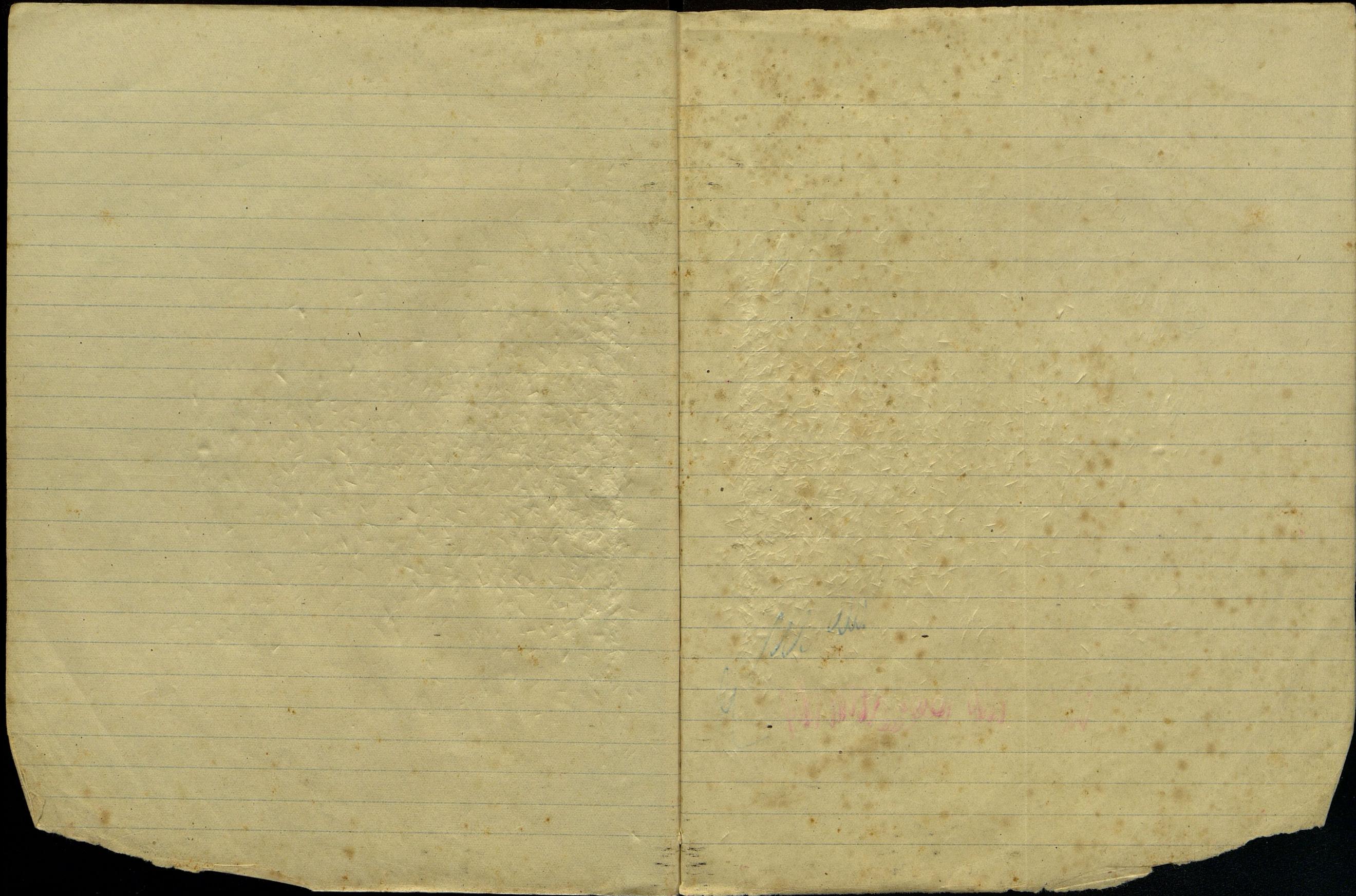












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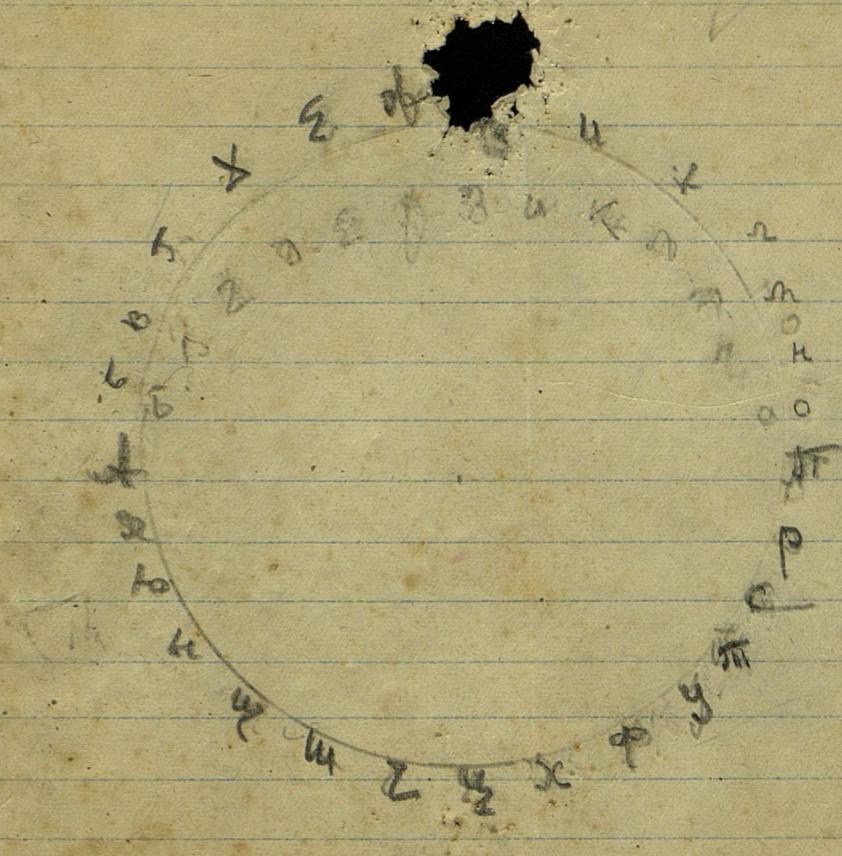
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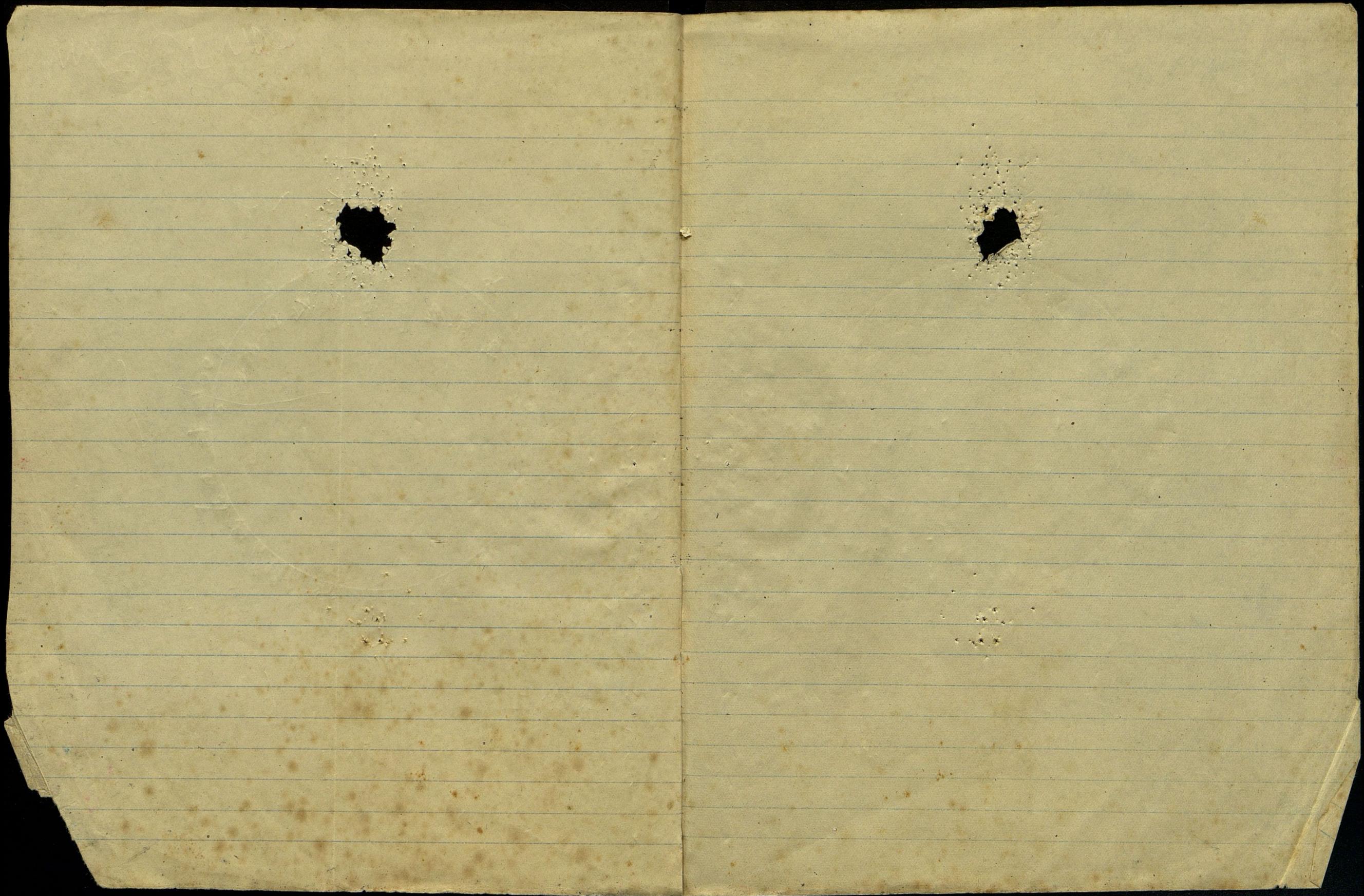
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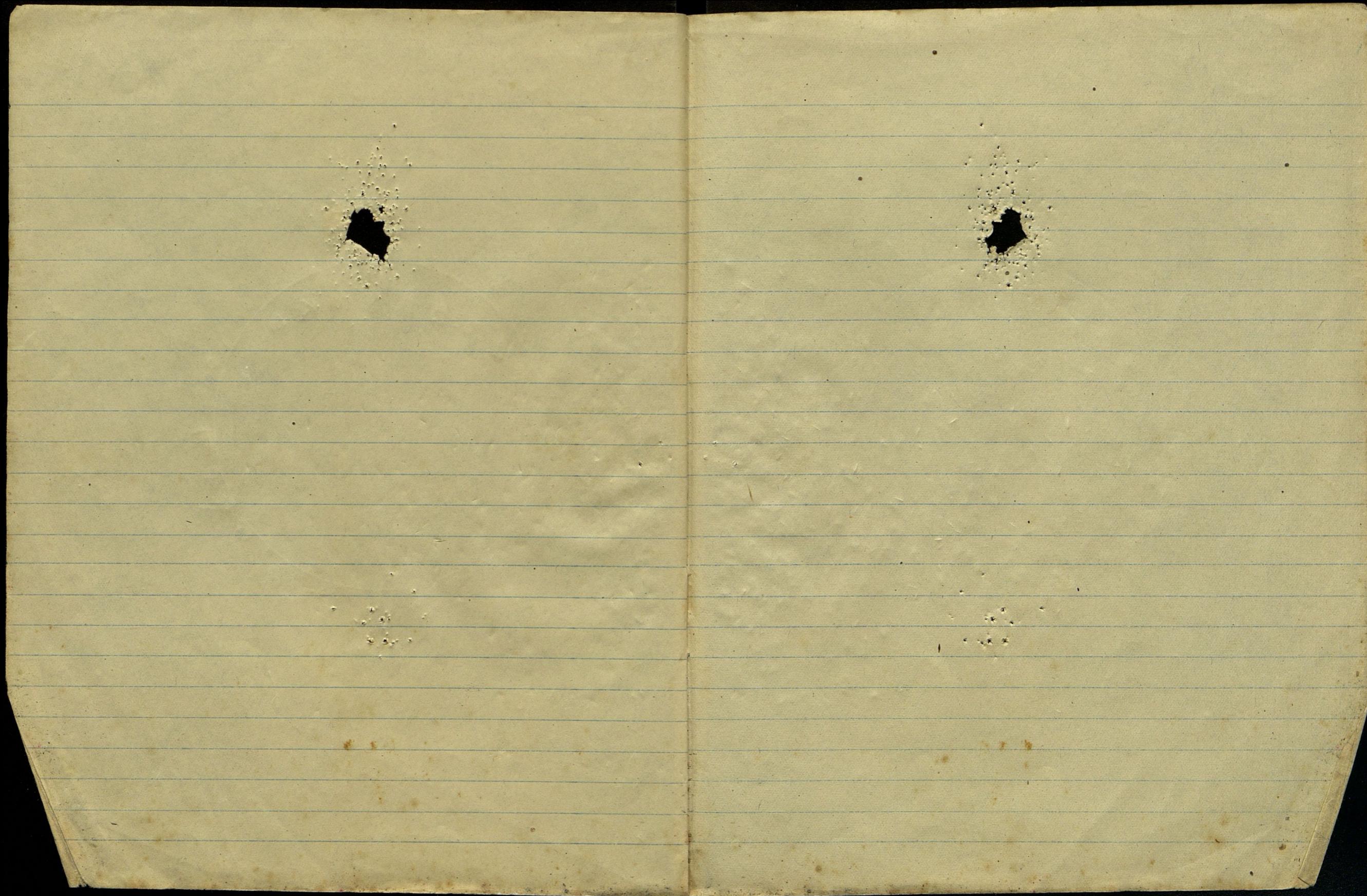
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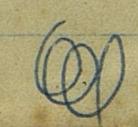
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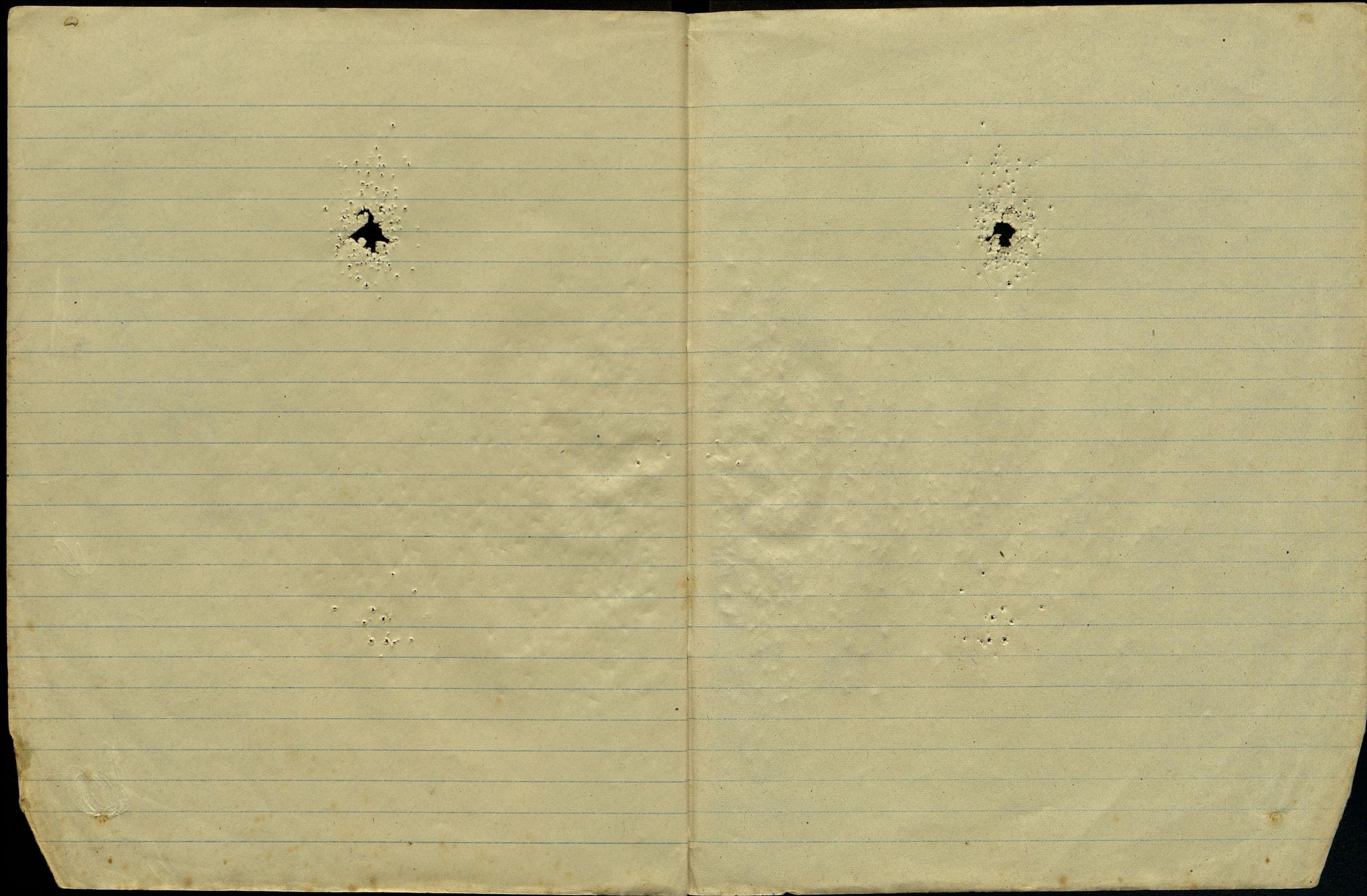


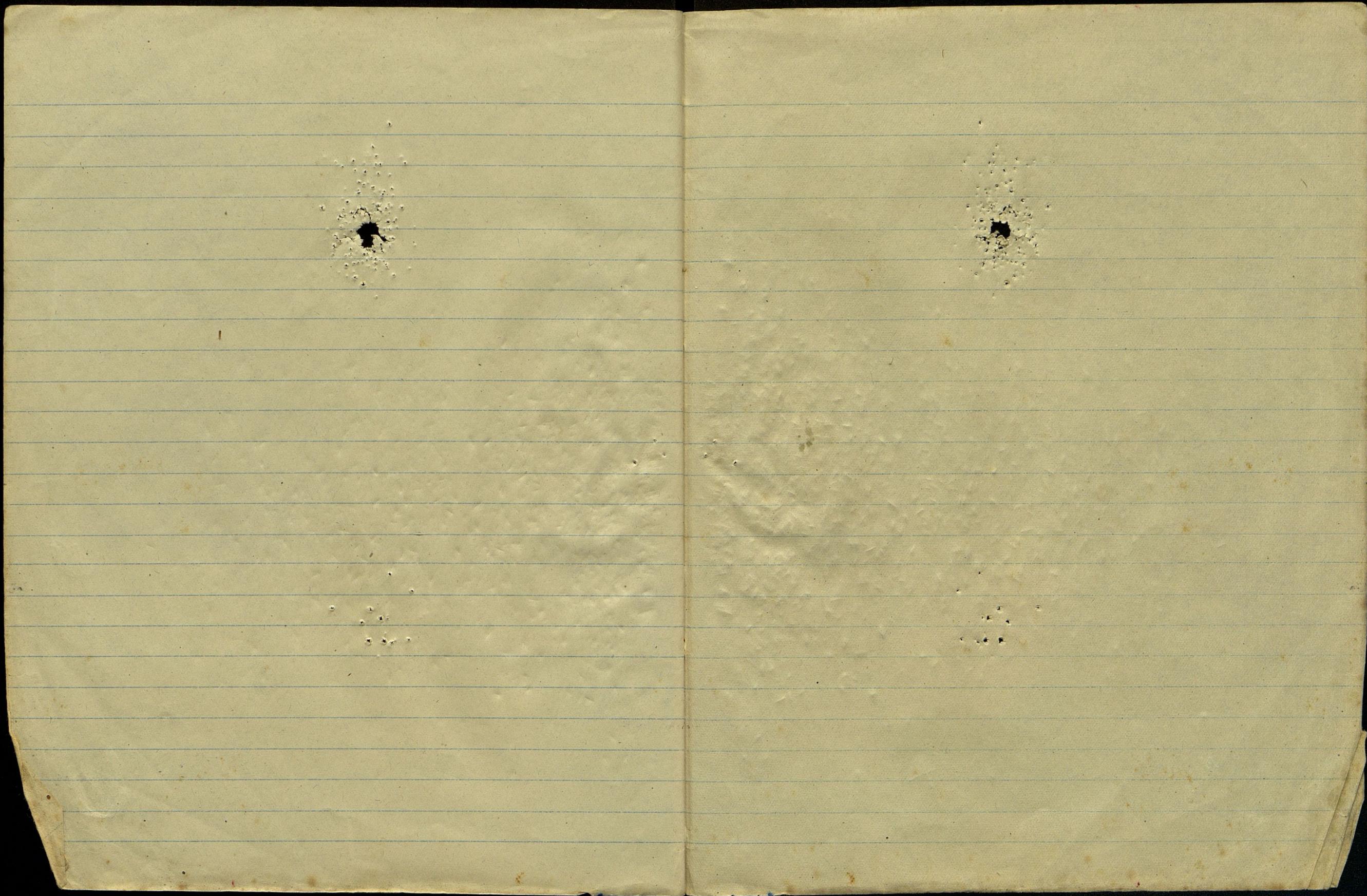
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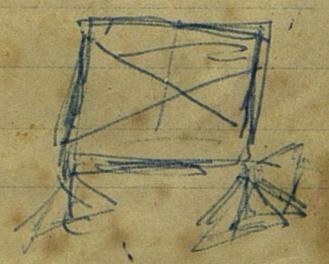
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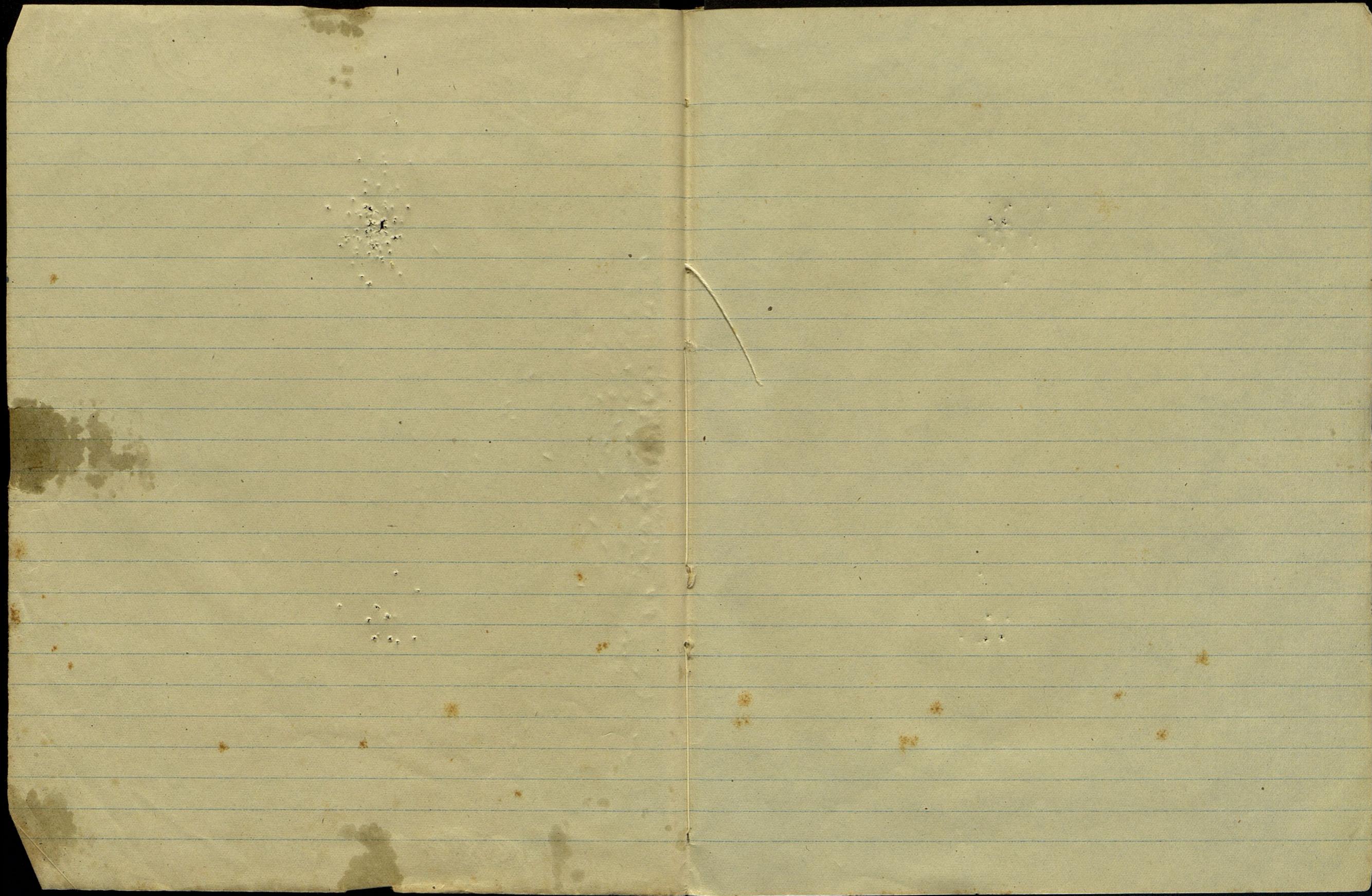
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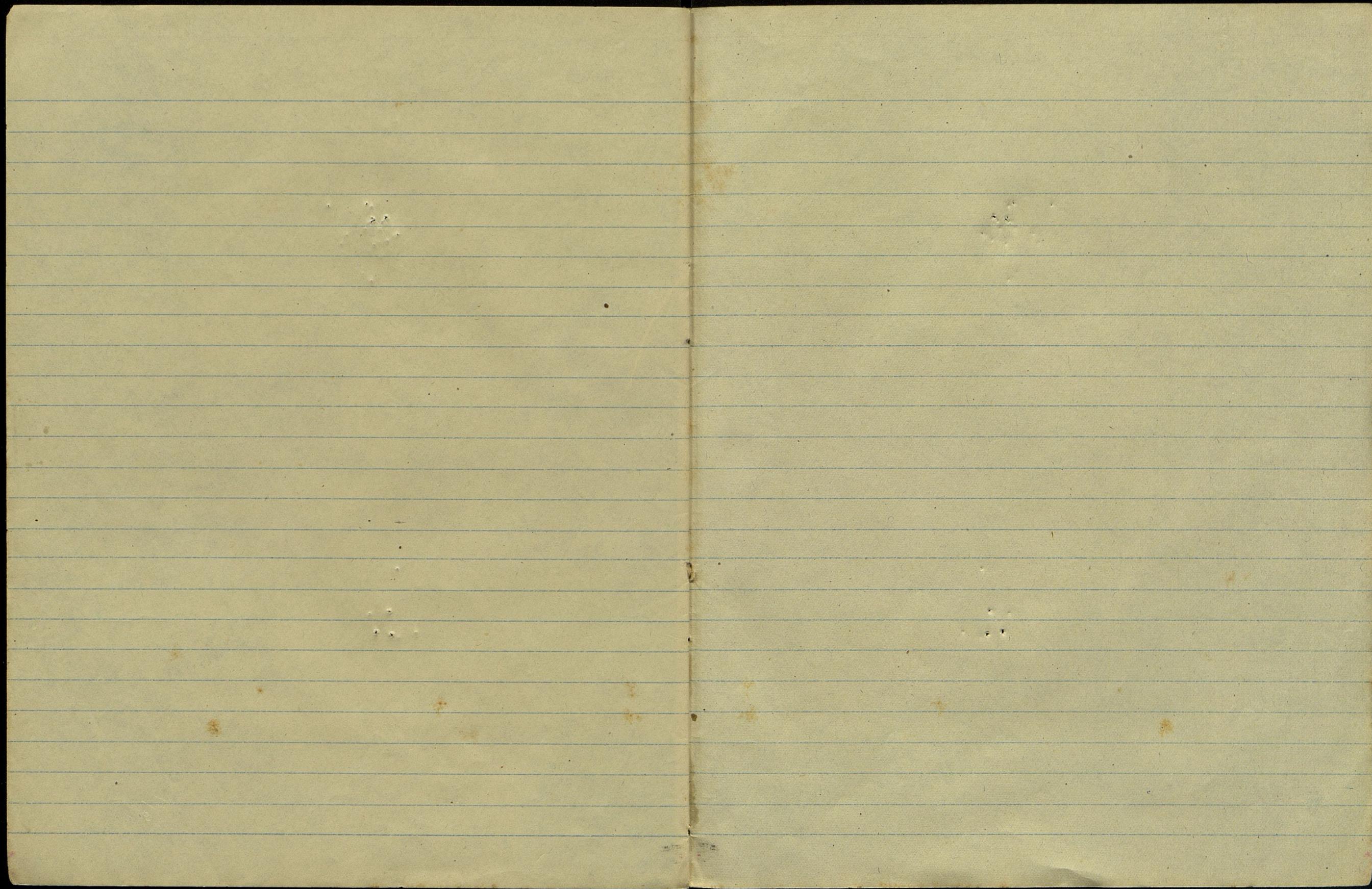
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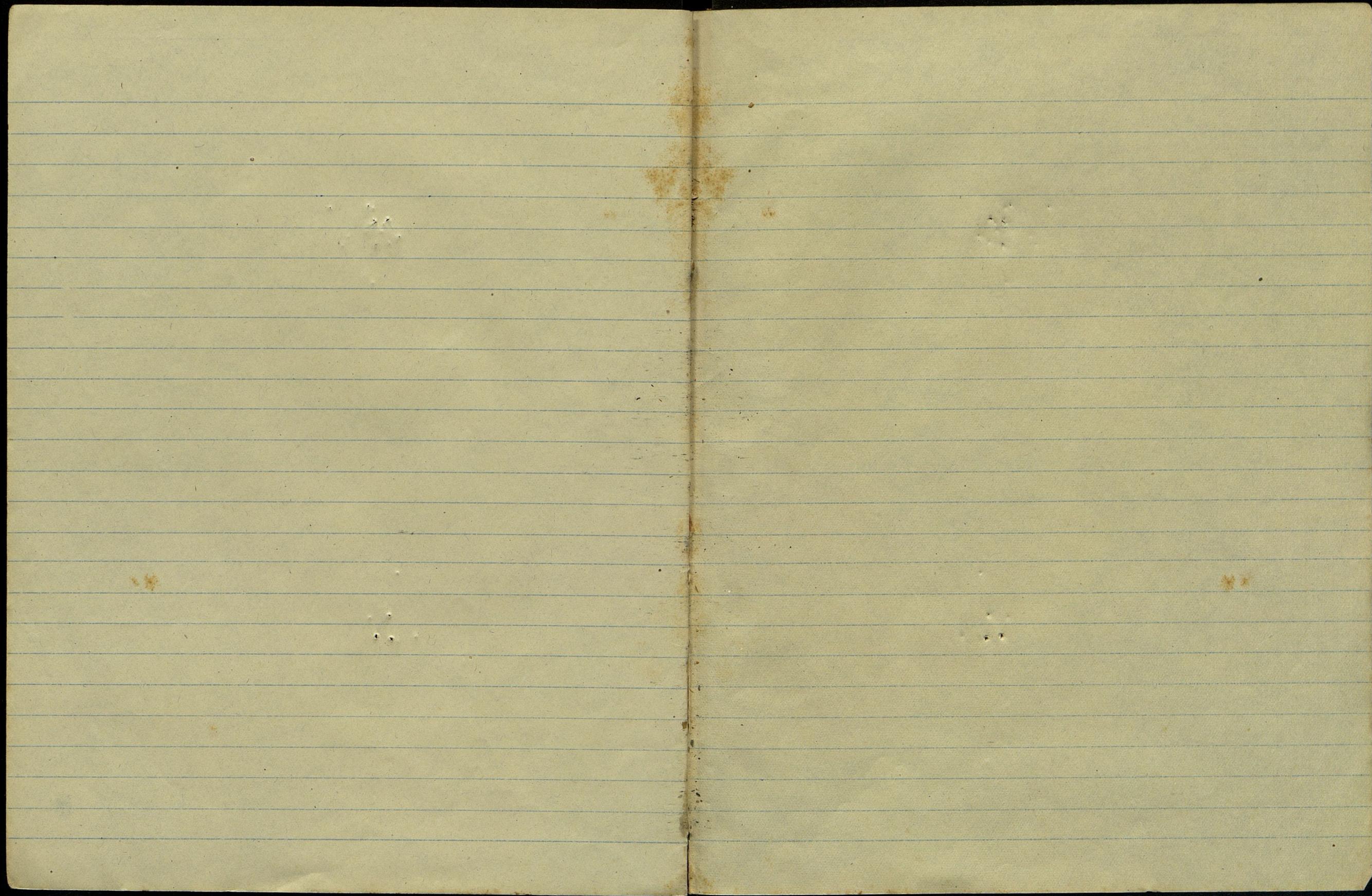
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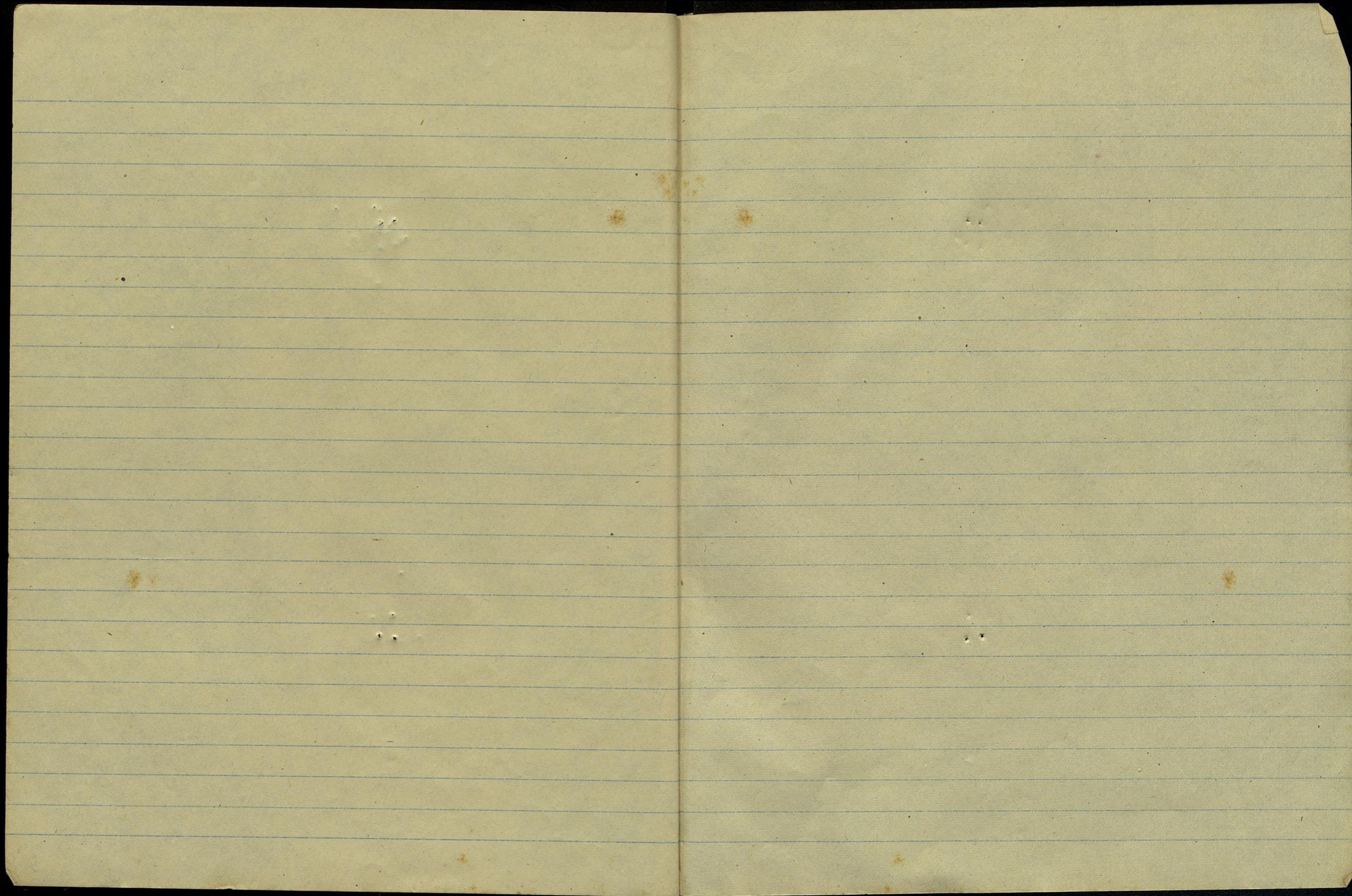


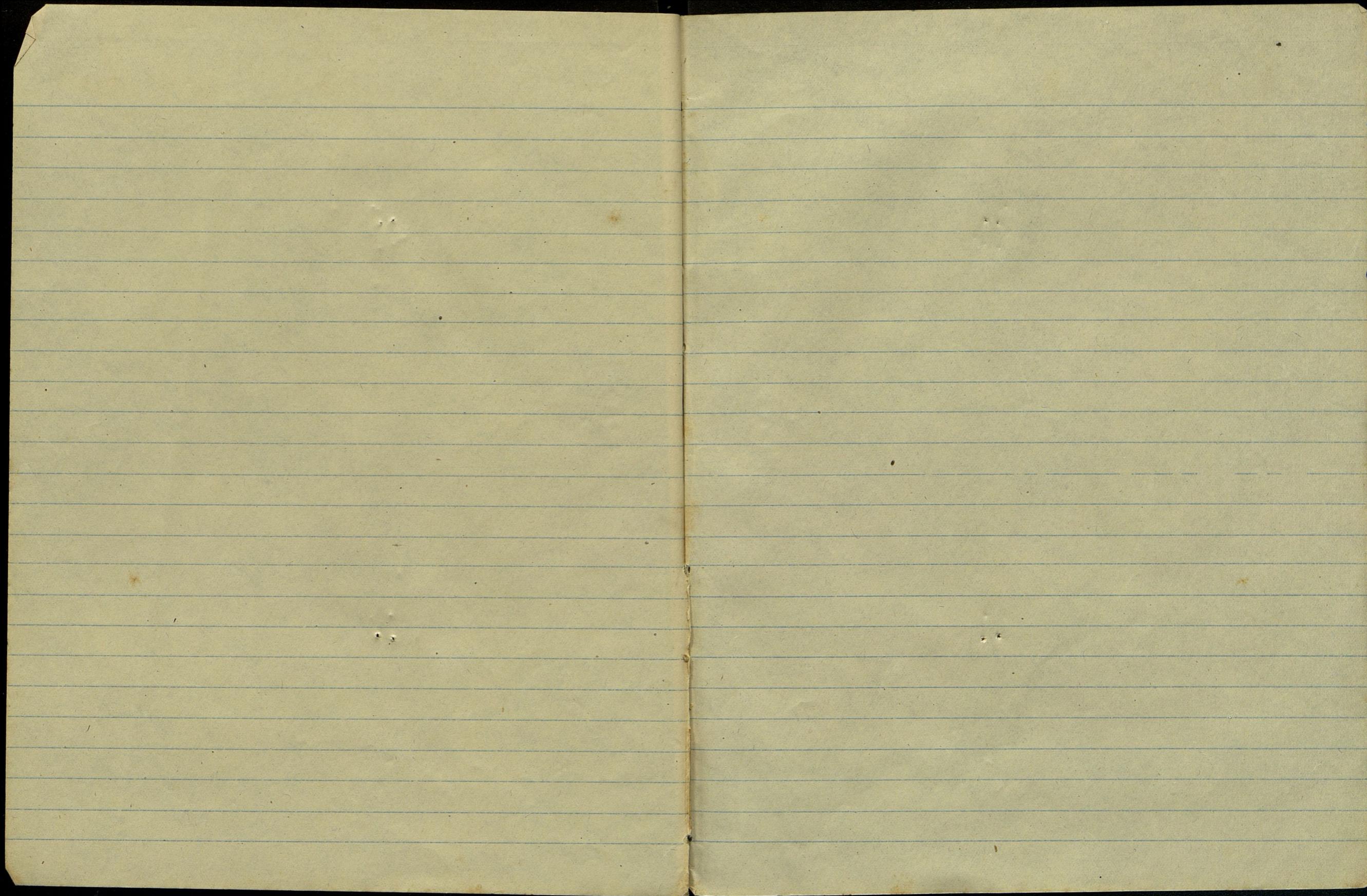
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Pinguicula vulgaris B. Beer

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West Bengal

India

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Canon - 1554-1642

Boyer H. - 161-180 +
Julia - 185-254 -
Kumar - 206-337 -
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SPEAKING TO THE STARS

by Frank Feldman

MANY of the world's leading scientists agree that man will be able to see the end of all things—if there is an end to space—in the not too distant future. These scientists make the bold claim that astronomers may see a hundred times farther into the unexplored universe than in the past. The new kinds of invisible light are causing the time-space walls of outer space to crumble. These startling assertions were made recently at a scientific gathering of the National Academy of Science held in Washington. The meeting was devoted to a summary of the developments in radio-astronomy. It is heartening to know that the younger generation of scientists is strongly represented in this new experiment.

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Dr Martin Ryle of the Cavendish Laboratory, Cambridge University, told his colleagues that the radio-telescope will probably be able to penetrate space a billion or more light years in every direction beyond the greatest range of the world's largest optical telescopes. Ryle admitted, however, that there was plenty of room for improvement. According to Dr Ryle, the potentialities of the radio waves are infinite whereas the possibilities of the 200-inch telescopes are almost exhausted.

Head-on collisions between two galaxies three to four milliard light years away can be picked up by their radio-radiations, explains Dr Ryle. This is something that

the orthodox telescope cannot achieve. These collisions are catastrophic events which have been occurring since the creation of the universe. The Swan galaxy which has been in a recent collision, has already been through some 500 such collisions. Radio telescopes have picked up one very talkative star which was born. The phenomenon of these sounding stars is no longer startling. We know, for instance, that stars are being continually born in space from the condensation of interstellar material, such as dust and gas. It forms into a kind of globule, (known scientifically as a proto-star). Gradually it becomes denser, accumulating more mass until by the very process of condensation, which creates movement and thus energy, it becomes hot enough to shine brightly. When this has gone on for some hundreds of thousands of years, the star becomes visible to the human eye.

Radio astronomy may give the world a chance to know of future catastrophes in space, something orthodox, telescope-bound astronomy has not been able to do. Perhaps some people might not want to know of cosmic disasters which lie ahead. However, science cannot exercise emotional scruples. Only recently the earth had a lucky escape from a swishing hulk of mountain. The first record of the near catastrophe was a broad streak across a photographic plate. It was taken by a photograph reflector at Mount Palomar, USA.

This was last March. Just before

March 9 it came so close to the earth that it might have been seen with the naked eye. Imagine a hunk of rock weighing 3 million tons travelling at a speed of 72,000 miles an hour smashing into the earth. A city the size of Manchester or Liverpool would have been pulverised and the planet would have gashed a hole 150 miles deep into the earth's surface. Another lucky escape occurred in 1937 when the planet Hermes crossed the earth's orbit just in time to save a collision. Other "lucky shaves" occurred with small planets in 1950, 1936 and 1932.

★

A stranger to our solar system whisked by us in 1947. It was studied by Dr Cunningham, an authority on planetary orbits, and he said that it would never return. It was tremendously large. There are stars known as "black dwarfs"—which are invisible to ordinary astronomers, but which may be picked up by radio astronomers—which could cause the destruction of the earth. It is thought that they are composed of substances many times heavier than that of the earth: atomic substances which would throw off electrons on contact with our planet and so bring about the end of our world. But such stellar menaces are a long way off as yet. For that we may be grateful.

There are many of these asteroids swishing through space. They all bear names ending in "a" as stars were thought to be feminine. Astronomers have

named their discoveries after their wives and their lady-friends. Greek goddesses once supplied the names but these soon ran out as 1,560 asteroids have been found. They have been named after cities, popes, illustrious men. Rockefeller's name has been immortalised as an asteroid. Perhaps he and another one—Lenin—will crash one day! Ideologically speaking, that would be justifiable, but physically almost impossible.

Most of these asteroids will go on being discovered with the use of radio-astronomy. Hitherto, telescopes—even the most powerful ones, like the 200-inch giant at Mount Palomar, the mirror of which alone weighs 34 tons—have been dependent on electro-magnetic radiation ranging from about 4,000 Angstrom units to 6,500 Angstrom units which is very very low—since an Angstrom unit is equal to one hundredth millionth part of a centimetre. Various devices have been developed to augment the range of vision held either by the eye or by the panchromatic plate; but none of these provide as much useful information as waves of 10 centimetres and upwards as developed by radar during the war.

Radio astronomy has also opened the field of echo-finding. Echoes are sent out to the moon and meteors and are "recaught" for measurement purposes. All this is something which will break down the barriers which seemed infinite in their perplexing immensity to man.

...which is supreme.

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1953 - Dec 24th

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