

PITYRIASIS ROSEA

*Some Common Errors in Diagnosis with a Brief Review
Stressing the Differential Diagnosis*

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The national campaign against syphilis is doing much to arouse in physicians and especially in the laity a syphilis consciousness. The campaign, while it seeks to draw attention to all forms of syphilis, stresses particularly the detection and management of the highly infectious primary and secondary manifestations. Syphilis not only simulates other diseases in its late manifestations but the secondary eruption may imitate many other dermatoses. Many persons have now learned that secondary syphilis is a generalized eruption and we have been impressed during the past two years by an increasing number of persons who, on discovering the presence of pityriasis rosea on their bodies, have come to us for assurance that they do not have syphilis.

Pityriasis rosea is a harmless and clinically unimportant disease *per se*, but, although uncommon (an incidence of about 5 per 1000 skin diseases¹), it takes a prominent place in the differential diagnosis of secondary syphilis with which it may be confused. The acute generalized maculopapular and papular types which occasionally appear on the face and genitalia at first sight do look formidable. If the busy physician makes only a superficial examination or is unfamiliar with the fundamental characteristics of the disease, he may be led to an erroneous diagnosis of syphilis. An intimation of such a diagnosis to the patient may do irreparable damage to both the patient himself and his domestic happiness as well as cause the physician much embarrassment.

The superficial, cutaneous, fungous infections occupy a position parallel with that of syphilis in relation to pityriasis rosea, due mainly to the actual increase in the incidence and the laity's increasing familiarity with tinea infections. When a patient presents himself with a lone herald plaque or the herald plaque accompanied by a few macules of the secondary eruption, it is easy to assume that they are lesions of tinea corporis. If the herald plaque occurs in the genitocrural region, there is a still greater possibility of mistaking it for tinea (*eczema marginatum*). The seriousness of this lies in eczematizing the skin with strong keratolytics and fungicides.

Pityriasis rosea is not often confused with psoriasis or suborrheic dermatitis as evidenced by the absence of such indications in the records of the 108 cases of pityriasis rosea seen in the past 10 years.

The following case histories are typical examples showing the results of failure to recognize pityriasis rosea:

Case 1: Eczematization of the Neck, Chest, and Axillae by Treating the Herald Plaque and First Few Macules as Ringworm.

A young woman, 30 years of age, entered the Clinic in October, 1938, complaining of an eruption on her neck, trunk, and extremities. Two weeks previously she had noticed a pink and slightly itching spot about the size of her little finger nail on the left side of her neck. After a few days the spot had increased in size and, thinking that it was a "ringworm," she went to her physician who confirmed her suspicion. A salve was prescribed which was applied three times a day. Three or four days later, other similar spots began to appear on the neck, upper part of the chest, and about the axillae. She visited her physician again, this time complaining of severe itching. He advised her to continue to apply the salve on her neck and chest and to use a lotion for the axillary regions; however, this treatment did not stop the appearance of new lesions. Because the ointment made her chest and neck inflamed, she stopped using it and a few days later she came to the Clinic. Just prior to the onset of the primary lesion, she had had a head cold and sore throat.

Examination of her skin revealed a moderately severe erythematous, vesicular dermatitis of the neck, upper chest, and axillae. The initial lesion apparently had been obliterated by the eczematization. The remainder of her trunk, the thighs, and upper arms showed a symmetrical and bilateral distribution of typical pityriasis rosea.* The general physical and laboratory examinations revealed no findings of significance. The Wassermann and Kahn tests gave negative reactions.

Case 2: Eczematization Due to Self-Treatment of Pityriasis Rosea for Ringworm.

A minister, a woman 29 years of age, came to the Clinic in October, 1938, with a history almost identical with that of the patient described in Case 1, except that the initial spot appeared on an old thyroidectomy scar. As it enlarged it became ring-like and, believing it to be a ringworm, she applied musterole ointment. This made the skin very red, inflamed, and pruritic. A month later, three days before admission, the secondary eruption appeared.

Examination of the skin revealed a healing, but scaly, erythematous dermatitis on the neck through which the initial plaque was plainly visible. The trunk, upper arms, and thighs showed typical pityriasis rosea.

The general physical and laboratory examinations gave normal findings. The blood Wassermann and Kahn tests gave negative reactions.

Case 3: Pityriasis Rosea Treated as Syphilis Producing Syphilophobia in a Case of Anxiety Neurosis.

This young man, a salesman 33 years old, came to the Clinic on January 6, 1938, complaining that a severe, itching rash on the trunk had been present for three months. The initial spot had appeared in the left groin. The first physician he consulted stated that the rash was a fungous infection and treated it with several roentgen ray treatments and a lotion. As this did not stop the spread of the eruption, he saw another physician who said that he probably had a drug eruption. He was put on a regimen including a strict diet of fruit juice, frequent catharsis, and potassium permanganate baths. The patient insisted that he lost 30 pounds in two months.

* For the sake of brevity, a description of the cutaneous lesions is omitted from the case reports. They are described in detail in the section on morphology.

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Examination of the skin revealed a dry, scaling dermatitis in large patches on the trunk and upper parts of the extremities; its exact nature could not be determined because of the marked potassium permanganate discoloration of the skin. However, several plaques on the back and in the groins suggested those of pityriasis rosea.

The general physical and laboratory examinations revealed no abnormalities. The blood Wassermann and Kahn tests gave negative reactions.

Following treatment with soothing lotions and ointments plus two fractional doses of superficial roentgen rays, the dermatitis cleared up.

The patient was not seen again until six months later when he stated that he felt fairly good except that a burning sensation in the groins had persisted and he couldn't sleep. It was further elicited that because of this he went to see a psychiatrist who told him that he had an anxiety neurosis, which diagnosis has been confirmed. At this examination the examiner noticed a dry skin with keratosis pilaris and a general enlargement of the superficial lymph glands. More searching examinations were made but nothing strikingly abnormal was found. He was assured that there was nothing organically wrong and an attempt was made to correct the neurosis.

Six months later, on November 1, the patient returned to the Clinic, this time exhibiting a typical pityriasis rosea. He stated that this eruption was similar to the one that he had the previous year, and this time he was certain that there was something really wrong with him. He therefore went to a physician friend who took a blood test and gave him 10 injections of nearsphenamine. Frequent blood tests were made but all were negative. On one of his territorial trips, he consulted a dermatologist who also took blood for testing but it gave a negative reaction. Careful questioning did not elicit a possible source of infection.

On examination the patient was seen to be very apprehensive and depressed. He was perspiring profusely and his hands showed a coarse tremor. Another general physical and neurological examination gave negative findings except for slightly enlarged inguinal lymph glands. The eruption was typical of pityriasis rosea with the herald plaque in the right groin. The nature of the eruption was explained to him and he was assured that it was not syphilis.

A week later he returned to the Clinic because of boils in the axillae. Several large, deepseated and painful nodules were present in each axillae. These have since disappeared after roentgen therapy and incision. Three weeks later the eruption had almost completely disappeared.

Since this is the time of year in which the greatest number of cases of pityriasis rosea are seen and also the time in which errors in diagnosis are commonly made, a brief review of the etiology, clinical manifestations, differential diagnosis, and treatment of this condition is considered timely.

ETIOLOGY

In recent years accruing evidence is supporting the theory that pityriasis rosea is a specific exanthem with special periods of incubation, evolution, and decline. Three etiologic factors have been proposed:

(1) Thomson and Cumings,² following experiments with filtered extracts of scales from the lesions and on clinical comparison with the

TABLE 1
 MONTHLY INCIDENCE OF PITYRIASIS ROSEA INCLUDING 1133 CASES COLLECTED BY WEISS ET AL.,¹ 156 CASES REPORTED BY THOMSON AND CUMINGS,² 230 CASES REPORTED BY PERCIVAL¹ (ESTIMATED FROM GRAPH), AND 108 CASES FROM THE CLEVELAND CLINIC.

<i>Authors</i>	<i>No. of Cases</i>	<i>Jan.</i>	<i>Feb.</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>	<i>July</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Weiss et al	1133	111	101	108	95	117	74	51	76	102	98	96	104
Thomson and Cumings	156	13	14	15	12	10	11	9	...	14	23	19	14
Percival	230	16	23	22	6	16	12	13	20	21	24	30	28
This series	108	10	10	5	8	8	7	5	6	13	10	18	9
Total	1627	150	148	150	121	151	104	78	102	150	155	163	155

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acute exanthemata, suggested that the disease was probably due to a specific virus.

(2) In 1927, Wile³ succeeded in producing in four persons an eruption simulating that of pityriasis rosea. This was done by inoculating into the skin the fluid contents of blisters raised on the primary and secondary plaques. Benedek⁴ in 1932 isolated an organism from the plaques and fluid of blisters raised on the plaques by Wile's method. With an extract from this organism (*schizosaccharomyces hominis*) he claims to have produced an eruption similar to that of pityriasis rosea.

(3) Some French authors⁵ believe that their experimental data indicate a streptococcus as the cause.

The incubation period is reckoned from the time of onset of the herald plaque to the appearance of the secondary eruption. The average period is from 7 to 14 days with a minimum of a few days and a maximum of about two months.

Authoritative opinion is divided as to the portal of entry. The herald plaque is believed by some to be the portal of entry, while others believe the tonsils and other lymphatic structures of the throat are sites of entrance of the virus. Experimental evidence and clinical observations associating the location of the herald plaque at points of entrance such as vaccination, operative wounds, needle pricks, and most commonly on the trunk where the virus may enter the skin due to close-fitting and ill-ventilated clothing supports the former view.⁶ The presence of diseased throats, inflamed tonsils, and cervical adenopathy support the latter viewpoint.

Lord⁶ has collected reports of from two to four persons in the same family or in close association who acquired the disease in rapid succession at about a week apart. Percival's figures¹ suggested that by 1930 the disease in Edinburgh had reached epidemic proportions. Even though pityriasis rosea is uncommon, recurrences in the same individual are rare. These observations suggest that pityriasis rosea may be an infectious disease and that one attack establishes an immunity.

Table 1 shows the incidence of pityriasis rosea according to months. It is seen that the greatest number of cases occur in the months of fall, winter, and spring which is comparable to the maximum incidence of many acute infectious diseases and exanthemata.

The age incidence is shown in Table 2. The incidence curve reaches its maximum in the third decade of life. Many acute exanthemata and acute infectious diseases have their maximum incidence in children below 15 years of age. No satisfactory explanation for this difference has been offered.

TABLE 2
AGE INCIDENCE OF PATIENTS WITH PITYRIASIS ROSEA

<i>Author</i>	<i>Total</i>	<i>Age in Decades</i>					
		<i>1-10</i>	<i>11-20</i>	<i>21-30</i>	<i>31-40</i>	<i>41-50</i>	<i>51-60</i>
Weiss et al	379	54	91	124	74	30	6
Thomson and Cummings	156	35	49	39	24	4	5
Fowle	220	21	43	77	46	11	..
Highman	51	4	6	13	21	3	4
Fox	74	5	15	35	9	10	..
Percival	234	29	76	80	31	17	1
This series	108	4	12	42	34	10	5
Total	1223	152	292	410	239	85	21

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Percival¹ gathered statistics from nine recorded series and 1112 cases elsewhere. In these he found the average sex incidence to be 57.4 per cent in women and 42.6 per cent in men. In two series, however, the ratio of males to females was 2 to 1. In our group, 67 per cent of the patients were women and 33 per cent men or approximately 2 to 1.

SYMPTOMS AND MORPHOLOGY

Systemic reactions when present are almost always mild. Only a few of our patients stated that they felt fatigue or malaise. Thomson and Cumings² mention that a few of their patients complained of dyspepsia and mild arthralgia.

Infections of the upper respiratory tract have been reported to precede or accompany the onset of pityriasis rosea in up to 90 per cent of cases. We have found similar complaints in about 10 per cent of cases. Cervical and general lymphadenopathy occurs in a few cases.

Mild elevations of the temperature have been observed at the onset of the eruption.⁷ This has not been seen in our series.

The majority of patients do not complain of pruritus. In the minority, itching may be so mild that the patient does not complain of it unless asked, but the itching may range from mild to severe. Weiss et al⁸ noted pruritus in 26.8 per cent of cases while we observed it in 35 per cent of our series. The most severe pruritus occurs in the urticarial type of pityriasis rosea. If the skin has been eczematized by treatment, pruritus is usually pronounced.

According to Percival¹ the herald plaque has been observed in from 12 to 94 per cent of cases; Weiss et al⁸ found it in 27 per cent, and we have noted its presence in 74 per cent of our cases. The herald plaque appears most commonly on the trunk. The neck, buttocks, thighs, upper arms, legs, forearms, and face in the order named are the next most frequent sites. It first appears as a small pink macule which in a few days usually attains the size of a quarter or larger. At this size, it often assumes an oval, ring-like form with a pale, fawn-colored center. When the lesion is grasped between the fingers, the scaly surface of the center crinkles in a manner similar to cigaret paper. At the inner edge of the border there is a scaling collarette. The border usually varies from a tawny salmon shade to pale red and is slightly elevated. The lesion is almost always the largest, most mature of the eruptions and may attain the size of the palm. The long axis of the oval lies along the lines of cleavage of the skin.

After an average of from seven to fourteen days, the plaque is followed by the secondary eruption. Klauder⁹ divides the efflorescence



FIGURE 1: Macular type of pityriasis rosea. Note herald plaque on the neck and distribution of macular lesions with axial arrangement along lines of cleavage.

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into three main types: macular, papular, and vesicular. The macular type is subdivided into punctate, guttate, nummular, circinate, and urticarial varieties. Maculopapular, follicular, and miliary types are variations of the papular group.

Urticarial and vesicular types are rare. In the former, the lesions are wheal-like and itch intensely but after a few days they tend to assume the characteristics of typical patches. Vesicles may be seen in the latter form. In the very rare instances when lesions occur on the palms or soles they are usually vesicular.

The macular type (Figs. 1 and 2) is the most common manifestation.⁹ A particular case may be classified as a subvariety depending on which type of lesion predominates. The macules are discrete or confluent; in the latter event scaly, erythematous patches are formed which may be irregular in outline. If the clearing of the patches is complete, circles are formed constituting pityriasis circinata. Circinate lesions are not likely to be seen when the eruption is of recent duration. The macular and circinate lesions usually duplicate the morphology of the herald plaque, and may enlarge to a diameter of two or more inches. The clearing centers, ovoid shape, and long axes along the lines of cleavage are important diagnostic features.

In the less common papular type, the maculopapular variety occurs most frequently. The papular variety consists of well-defined, but not grouped papules; they are rosy pink in color, varying in size from a pea to a dime, and are scaly from the onset. Macules may coexist with the papules thus constituting the maculopapular variety. In negroes a combination of follicular papules, papules, and macules is more frequently observed than in white persons.

The distribution of the eruption in a typical case is limited mainly to the trunk. The lesions are most numerous about the axillae and sides of the thorax and flanks. A lesser number are found on the neck, upper arms, and thighs. There may be a few on the forearms and legs, but they are rarely found on the face, hands, and feet. In children and infants, the eruption may be profuse on the face and scalp.

Pityriasis rosea may be restricted to certain areas such as only one side of the body, genitocrural, upper chest, and axillary regions, or the face and neck. In inverted pityriasis rosea, the lesions are limited to the extremities. When the exanthem is limited to the genitocrural and axillary regions, there may be some difficulty in differentiating it from ringworm (Fig. 3).

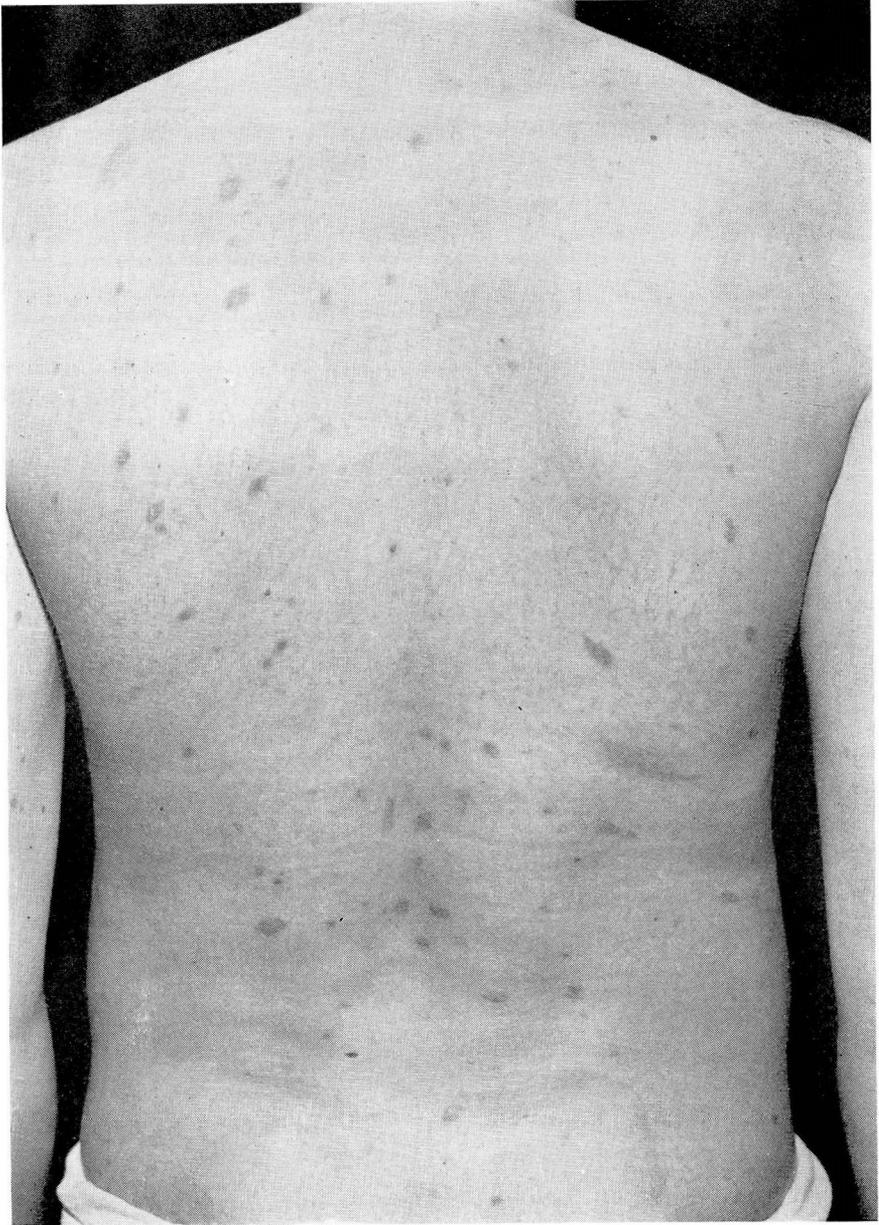


FIGURE 2: Macular lesions on the back. Same case as Fig. 1.

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DIAGNOSIS

The diagnosis of pityriasis rosea is based on the following features: (1) The history of onset of the herald patch preceding the secondary eruption and the presence of the plaque itself; (2) the crinkled, cigaret paper-like scaly surface of the macules; (3) the arrangement of the macules, circinate lesions, and even papules with their long axes along the lines of cleavage; (4) the distribution of the eruption which chiefly involves the trunk.

The differential diagnosis between pityriasis rosea and the secondary eruption of syphilis probably is best shown in tabular form (Tables 3, 4 and 5).

TABLE 3
DIFFERENTIAL DIAGNOSIS OF PITYRIASIS ROSEA
AND SECONDARY SYPHILIS

<i>Macular and Circinate Pityriasis Rosea</i>	<i>Macular Syphilid</i>
1. History and finding herald plaque	1. No herald plaque
2. No chancre	2. Chancre present in 90 per cent of males, smaller percentage in females
3. Positive Wassermann and Kahn reactions in small percentage—almost always coincidental	3. Wassermann and Kahn reactions positive in almost 100 per cent
4. Presence of oval, fawn-colored lesions with central cigaret paper-like crinkled scaling	4. Macular syphilids not scaly, dull pink to red or brownish red color
5. Slight infiltration if any	5. More infiltrated
6. Long axes along lines of cleavage	6. May be slight suggestion in roseolar syphilid
7. Mouth lesions very rare.	7. Mucous patches in mouth and anus common. Spirochetes frequently found
8. Confluence with retiform arrangement when eruption is profuse	8. Macules and papules remain discrete
9. Lesions on face, hands, feet, palms, and soles very rare	9. Face, palms, and soles are common sites
10. Constitutional symptoms mild and general glandular enlargement very uncommon	10. Constitutional symptoms may be marked and general glandular enlargement common



FIGURE 3: Herald plaque of pityriasis rosea. Compare with figure 4.

All the patients in our series had routine laboratory examinations including blood Wassermann and Kahn tests. Of the series only four patients had syphilis, two of whom had late syphilis and pityriasis rosea developed during anti-syphilitic treatment. In the third case which was being treated for acute syphilis, the eruption occurred during the week following the last injection of the first course of neoarsphena-

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TABLE 4

DIFFERENTIAL DIAGNOSIS OF PITYRIASIS ROSEA AND SECONDARY SYPHILIS

<i>Papular Pityriasis Rosea</i>	<i>Papular Syphilis</i>
1. Papules discrete and rosy-pink, superficial and noninfiltrated	1. Discrete, deeper shades of red to brownish red, shotty, and infiltrated
2. Confluent in axillary and genitocrural regions but no condylomatous formation	2. Remain discrete but lesions about genitals and anus often become condylomatous
3. Seldom on face, hands, and feet	3. Common on face, palms, and soles
4. Other characteristics listed in table 3	4. Other characteristics listed in table 3

TABLE 5

DIFFERENTIAL DIAGNOSIS OF PITYRIASIS ROSEA AND SECONDARY SYPHILIS

<i>Circinate Pityriasis Rosea</i>	<i>Annular Syphilid</i>
1. Lesions large circinate; when become confluent, form gyrate patterns	1. Usually discrete but may form gyrate patterns
2. Superficial, slightly elevated and infiltrated; tawny salmon colored border	2. Elevated, firm, infiltrated borders of dull red to brownish red color
3. Crinkled cigaret paper-like scaling	3. Surface of lesions usually smooth but may have slight scale
4. Other characteristics in table 3	4. Other characteristics in table 3

mine, five weeks after all signs of the syphilitic secondary eruption had disappeared. The fourth patient gave a history of having had a chancre five years before and also gave positive reactions to the Wassermann and Kahn tests. In all four cases, the eruption was typical.

Ringworm: Table 6 shows the important points in differential diagnosis of pityriasis rosea and ringworm.

Seborrheic dermatitis: The scaly, macular type of seborrheic dermatitis may simulate pityriasis rosea. However, in most cases there is a history of slow evolution and chronicity of seborrheic lesions in the seborrheic areas such as the scalp, behind the ears, on the forehead,



FIGURE 4: Disseminated tinea corporis. Scales showed many fungous hyphae. Note sharp, serpiginous, vesicular border of large lesion on abdomen, and new lesions within the larger ones. Compare with figures 1, 2, and 3.

base of the nose, midportion of the chest and interscapular region. Erythematous patches are likely to be in the axillae or beneath the breasts of women. The lesions have a characteristic yellowish pink color with more abundant, coarser, and greasy scales. In contrast the four characteristics listed above for the diagnosis of pityriasis rosea

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TABLE 6
DIFFERENTIAL DIAGNOSIS OF PITYRIASIS ROSEA
AND RINGWORM

<i>Herald Plaque and Macular Pityriasis Rosea</i>	<i>Ringworm of Body (Tinea Corporis and Cruris)</i>
<ol style="list-style-type: none"> 1. Herald plaque most common on trunk, oval, long axis along lines of cleavage, no vesiculation 2. No peripheral or satellite lesions 3. Fawn colored, dry central crinkled cigaret paper-like scale 4. No hyphae of fungus growth seen in scales 	<ol style="list-style-type: none"> 1. Most common on face, neck and hands, and genitocrural region, brighter red, circular lesions with raised vesicular border; no axial arrangement 2. Peripheral vesiculopapules common 3. Scale more thick and tenacious in center. On border when removed fluid escapes 4. Fungus hyphae practically always found in scales
SECONDARY ERUPTION	
<ol style="list-style-type: none"> 5. Rapid evolution to maximum number of lesions in few days to a week 6. Usually bilateral and symmetrical 7. Oval patches with axial arrangement 	<ol style="list-style-type: none"> 5. Slow evolution over period of weeks or months with peripheral spreading to form large gyrate and serpiginous patterns. Usually few lesions (Fig. 4) 6. Usually asymmetrical, rarely bilateral 7. Circular. May be concentric rings. No axial arrangement

should be kept in mind in the differentiation between it and seborrheic dermatitis.

Psoriasis: Psoriasis usually is a chronic affection lasting over a period of years, while pityriasis rosea is acute and of short duration. The lesions of psoriasis are red, more inflammatory, and covered with laminated, silvery white scales which, when removed by scraping, expose minute bleeding points. The sites of predilection are the scalp and extensor surfaces of the elbows and knees.

Psoriasis may be initiated by an acute onset or the chronic stage may present at times an acute exacerbation. The lesions, although brighter red and with fewer scales, are usually punctate, guttate, or circular without axial arrangement. When the scales are scraped off these lesions, bleeding points may be seen. An acute attack may come and go as such, but usually it terminates in a chronic form of the disease. This never occurs in pityriasis rosea.

Drug eruptions: Dermatitis medicamentosa due to arsenicals and bismuth very rarely simulates pityriasis rosea.¹⁰ The resemblance is superficial and differentiation is of little practical importance to the internist or general practitioner.

TREATMENT

Because pityriasis rosea is a mild, acute exanthem of short duration with practically no complications, treatment is unnecessary in many cases. In those patients who have a mild infection of the upper respiratory tract or systemic reaction, symptomatic treatment may be instituted.

If pruritus is a pronounced feature, mild sedatives may be given for a few days. Locally, a lotion consisting of phenol 1 to 2 per cent, resorcin 2 to 3 per cent, zinc carbonate 10 gm., zinc oxide 10 gm., olive oil 64 cc. and aqua calcis, q.s.a.d. 128 cc. may be employed as an anti-pruritic and to remove the scales. The eruption appears to produce an increased irritability of most patients' skin such that stronger keratolytics may cause a secondary dermatitis. It is for this reason that the skin of most patients is eczematized when strong keratolytic and fungicidal ointments and lotions are used.

When it is necessary to shorten the course of the disease for cosmetic reasons, we employ ultraviolet irradiation which in most cases gives good results. The skin is irradiated for one minute at a distance of 30 inches the first dose. Thereafter the daily treatment is increased by one minute to 15 minutes, at which time the distance is shortened by one inch daily until the irradiation is 15 minutes at 18 inches distance. Usually the eruption will begin to disappear in about 2 weeks.

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