

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 6)*

Enzon Pharmaceuticals, Inc.
(Name of Issuer)

Common Stock, Par Value \$0.01
(Title of Class of Securities)

293904108
(CUSIP Number)

Keith Schaitkin, Esq.
Icahn Capital LP
767 Fifth Avenue, 47th Floor
New York, New York 10153
(212) 702-4388

(Name, Address and Telephone Number of Person Authorized to
Receive Notices and Communications)

November 9, 2012
(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of Section 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box //.

NOTE: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7 for other parties to whom copies are to be sent.

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

SCHEDULE 13D

CUSIP No. 293904108

1 NAME OF REPORTING PERSON
High River Limited Partnership

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //

3 SEC USE ONLY

4 SOURCE OF FUNDS
WC

5 CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //

6 CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:

7 SOLE VOTING POWER
1,180,972

8 SHARED VOTING POWER
0

9 SOLE DISPOSITIVE POWER
1,180,972

10 SHARED DISPOSITIVE POWER
0

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
1,180,972

12 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
2.66%

14 TYPE OF REPORTING PERSON
PN

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Hopper Investments LLC
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
1,180,972
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
1,180,972
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
1,180,972
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
2.66%
 14. TYPE OF REPORTING PERSON
OO
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Barberry Corp.
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
1,180,972
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
1,180,972
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
1,180,972
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
2.66%
 14. TYPE OF REPORTING PERSON
CO
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Partners Master Fund LP
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
WC
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Cayman Islands
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
2,027,313
 8. SHARED VOTING POWER
0
 9. SOLE DISPOSITIVE POWER
2,027,313
 10. SHARED DISPOSITIVE POWER
0
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
2,027,313
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
4.56%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Partners Master Fund II LP
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
WC
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Cayman Islands
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
644,696
 8. SHARED VOTING POWER
0
 9. SOLE DISPOSITIVE POWER
644,696
 10. SHARED DISPOSITIVE POWER
0
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
644,696
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
1.45%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Partners Master Fund III LP
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
WC
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Cayman Islands
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
245,292
 8. SHARED VOTING POWER
0
 9. SOLE DISPOSITIVE POWER
245,292
 10. SHARED DISPOSITIVE POWER
0
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
245,292
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
0.55%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Offshore LP
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
2,917,301
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
2,917,301
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
2,917,301
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
6.57%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Partners LP
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
WC
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
1,806,590
 8. SHARED VOTING POWER
0
 9. SOLE DISPOSITIVE POWER
1,806,590
 10. SHARED DISPOSITIVE POWER
0
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
1,806,590
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
4.07%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Onshore LP
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
1,806,590
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
1,806,590
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
1,806,590
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
4.07%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Capital LP
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
4,723,891
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
4,723,891
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
4,723,891
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
10.64%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
IPH GP LLC
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
4,723,891
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
4,723,891
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
4,723,891
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
10.64%
 14. TYPE OF REPORTING PERSON
OO
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Enterprises Holdings L.P.
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
4,723,891
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
4,723,891
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
4,723,891
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
10.64%
 14. TYPE OF REPORTING PERSON
PN
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Icahn Enterprises G.P. Inc.
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
4,723,891
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
4,723,891
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
4,723,891
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
10.64%
 14. TYPE OF REPORTING PERSON
CO
-

SCHEDULE 13D

CUSIP No. 293904108

1. NAME OF REPORTING PERSON
Beckton Corp.
 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //
 3. SEC USE ONLY
 4. SOURCE OF FUNDS
OO
 5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //
 6. CITIZENSHIP OR PLACE OF ORGANIZATION
Delaware
- NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:
7. SOLE VOTING POWER
0
 8. SHARED VOTING POWER
4,723,891
 9. SOLE DISPOSITIVE POWER
0
 10. SHARED DISPOSITIVE POWER
4,723,891
 11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
4,723,891
 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES //
 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
10.64%
 14. TYPE OF REPORTING PERSON
CO
-

SCHEDULE 13D

CUSIP No. 293904108

1 NAME OF REPORTING PERSON
Carl C. Icahn

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(a) //
(b) //

3 SEC USE ONLY

4 SOURCE OF FUNDS
OO

5 CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)

//

6 CITIZENSHIP OR PLACE OF ORGANIZATION
United States of America

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:

7 SOLE VOTING POWER
0

8 SHARED VOTING POWER
5,904,863

9 SOLE DISPOSITIVE POWER
0

10 SHARED DISPOSITIVE POWER
5,904,863

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON
5,904,863

12 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES

//

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)
13.29%

14 TYPE OF REPORTING PERSON
IN

SCHEDULE 13D

Item 1. Security and Issuer

This statement constitutes Amendment No. 6 to the Schedule 13D relating to the shares of Common Stock, par value \$0.01 per share (the "Shares"), issued by Enzon Pharmaceuticals, Inc., a Delaware corporation (the "Issuer"), and amends the Schedule 13D relating to the Shares filed on March 14, 2008 and amended by Amendment Nos. 1 through 5 thereto (as amended, the "Original 13D"), on behalf of the Reporting Persons (as defined in the Original 13D). Capitalized terms used herein and not otherwise defined have the respective meanings ascribed thereto in the Original 13D.

Item 5. Interest in Securities of the Issuer

Item 5(a) of the Original 13D is hereby amended and restated in their entirety with the following:

(a) The Reporting Persons may be deemed to beneficially own, in the aggregate, 5,904,863 Shares, representing approximately 13.29%¹ of the Issuer's outstanding Shares (based upon the 44,417,684 Shares stated to be outstanding as of October 24, 2012 by the Issuer in the Issuer's Form 10-Q filed with the Securities and Exchange Commission on November 9, 2012 for the quarterly period ended September 30, 2012).

¹ Reflects stock repurchases effected by the Issuer.

SIGNATURE

After reasonable inquiry and to the best of each of the undersigned knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

Dated: November 9, 2012

HIGH RIVER LIMITED PARTNERSHIP

By: Hopper Investments LLC, general partner

By: /s/ Edward Mattner

Name: Edward Mattner

Title: Authorized Signatory

HOPPER INVESTMENTS LLC

By: /s/ Edward Mattner

Name: Edward Mattner

Title: Authorized Signatory

BARBERRY CORP.

By: /s/ Edward Mattner

Name: Edward Mattner

Title: Authorized Signatory

ICAHN PARTNERS MASTER FUND LP

By: /s/ Edward E. Mattner

Name: Edward E. Mattner

Title: Authorized Signatory

ICAHN PARTNERS MASTER FUND II LP

By: /s/ Edward E. Mattner

Name: Edward E. Mattner

Title: Authorized Signatory

ICAHN PARTNERS MASTER FUND III LP

By: /s/ Edward E. Mattner

Name: Edward E. Mattner

Title: Authorized Signatory

ICAHN OFFSHORE LP

By: /s/ Edward E. Mattner
Name: Edward E. Mattner
Title: Authorized Signatory

ICAHN PARTNERS LP

By: /s/ Edward E. Mattner
Name: Edward E. Mattner
Title: Authorized Signatory

ICAHN ONSHORE LP

By: /s/ Edward E. Mattner
Name: Edward E. Mattner
Title: Authorized Signatory

ICAHN CAPITAL LP

By: IPH GP LLC, its general partner
By: Icahn Enterprises Holdings L.P., its sole member
By: Icahn Enterprises G.P. Inc., its general partner

By: /s/ SungHwan Cho
Name: SungHwan Cho
Title: Chief Financial Officer

IPH GP LLC

By: Icahn Enterprises Holdings L.P., its sole member
By: Icahn Enterprises G.P. Inc., its general partner

By: /s/ SungHwan Cho
Name: SungHwan Cho
Title: Chief Financial Officer

ICAHN ENTERPRISES HOLDINGS L.P.

By: Icahn Enterprises G.P. Inc., its general partner

By: /s/ SungHwan Cho
Name: SungHwan Cho
Title: Chief Financial Officer

ICAHN ENTERPRISES G.P. INC.

By: /s/ SungHwan Cho
Name: SungHwan Cho
Title: Chief Financial Officer

BECKTON CORP.

By: /s/ Edward E. Mattner
Name: Edward E. Mattner
Title: Authorized Signatory

/s/ Carl C. Icahn
CARL C. ICAHN